



NON-INTERSTATE SIGNING AND MARKING DESIGN GUIDELINES

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GEORGIA DEPARTMENT OF TRANSPORTATION
NON-INTERSTATE TRAFFIC SIGNING AND MARKING DESIGN GUIDELINES

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Section 1

INTRODUCTION

These design guidelines provide standards, guidelines and specifications that will be used for the design of traffic signing and pavement markings prepared for the Georgia Department of Transportation (GDOT). These design guidelines include a compilation of specific drafting and design standards, plan and specification presentations, and review procedures to ensure that construction documents properly convey the extent and character of work to be performed. Sound traffic engineering judgement shall be exercised in applying these guidelines. Along with the companion documents on Traffic Signal Design and Interstate Sign Design, these documents contain comprehensive guidelines intended to provide consistency in plans for traffic control devices.

1.1 Applicable Standards and Specifications

The specific documents that will govern all work efforts are the following:

- *GDOT Standard Specifications - Construction of Transportation Systems*, latest edition and supplements thereto. Documents listed below give more detail concerning specific traffic engineering design elements, but all work must be in accordance with the GDOT Specifications.
- *GDOT Signing & Marking Details*
- *GDOT Standard Detail Sheets*
- *GDOT Construction Details*
- *GDOT Plans Presentation Guide*
- *GDOT Electronic Data Guidelines (EDG)*

- *Manual on Uniform Traffic Control Devices*, Latest Edition adopted by GDOT. This document shall govern those aspects of the application of all signs, signals and pavement markings.
- *Standard Highway Signs (FHWA)*.
- *Americans with Disabilities Act*
- *A Policy on Geometric Design of Highways and Streets*, Latest Edition adopted by GDOT. Design standards outlined in this publication shall govern most geometric considerations. Metric units are used in this edition and a “soft” conversion should be used for projects designed in Imperial (English) units.
- *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals*. This document will provide criteria for structural design.
- *FHWA Work Zone Traffic Control Practices Manual*.

Section 2

GENERAL INFORMATION

The following standards apply to the preparation and presentation of signing and marking plans.

2.1 Drafting Standards

All plans submitted will be on full-size sheets, 36 inches by 24 inches. Drafting of the plans packages will be done using a version of MicroStation Computer Aided Drafting and Design software (CADD) approved by GDOT. Drafting standards shall meet all guidelines established in the *GDOT Plans Presentation Guide* and the *GDOT Electronic Data Guidelines (EDG)*. A CD-ROM computer disc of all CADD files (in MicroStation CADD 2-D format) of the final plan sheets will be submitted to GDOT with the submission of final plans.

Note: The GDOT Automated Data/Design Standards Committee (ADDS) has developed a variety of GDOT approved CADD standards and set-up files. These files may be available from the GDOT website.

2.2 Electronic File Structure

The following table summarizes the overall structure to be used for organizing the mapping and design work of signing and marking plans. All line work and text for signing and marking plans shall be contained in a file named SGN.dgn and shall contain the signing and marking for the entire project. All file names must use the PI number as part of the file name, per the EDG. An example PI number (123456) is used below. (Note: All MicroStation files developed for GDOT should be derived from the GDOT 2-D MicroStation seed file.)

FILE NAME	DESCRIPTION
123456SGN.dgn	One file that contains all design work for signing and marking for an entire project. This file contains all call-outs, tables, notes, etc
123456SGN##.dgn	A separate file will be made for each plan sheet at which signing and marking improvement work will occur.

All signing and marking CADD design shall be on the required levels in the SGN.dgn file. SGN##.dgn files (which reference the SGN.dgn file) are only used for the purpose of plans presentation.

2.2.1 Reference Files

Each of the files above must have reference files attached in order to create plan sheets. These include, but are not limited to, the following files:

- Base Files – These are the mapping files and roadway design files of a roadway improvement project. See section 2.3.2 of these Guidelines for specific elements.
- Property File – This file includes the existing and required right of way.

2.2.2 Design File (SGN.dgn) Level Structure

The design file contains the design of traffic control devices for the entire project. The level structure for signing and marking plans shall be as follows:

LEVEL	DATA ELEMENTS
57	Pavement Marking Notes (Call-outs)
58	Proposed Pavement Markings
59	Proposed Signs
60	Signing Notes (Sign Codes, Stations, Leader Lines, Notes)
61	Sheet Border, North Arrow, Scale and Match-lines

2.2.3 Fonts

Text in the SGN.dgn file should be Font 0 to 3 in the GDOT font.rsc file. The font.rsc file is a MicroStation resource file and is available from the Office of Traffic Safety and Design. Use text height and width of 5 for 1"=50' scale plan sheets. Use text height and width of 10 for 1" = 100' scale plan sheets.

2.2.4 Cell Libraries

A sign and marking design cell library that contains standard cells for signs and pavement marking items is also available from the Office of Traffic Safety and Design. The sign

and marking design cell file (as well as other GDOT design cell files) may also be available from the GDOT website.

2.3 Signing and Marking Plan Sheets

Prepare plan sheets to show all permanent roadway signs and pavement markings as they appear upon completion of the project. Place emphasis on designing clear directional signage, identifying roadway names, and coordinating sign placement with signal or utility poles, roadway features, structures, sight distances, and driver awareness. Signing and Marking plan sheets are generally done at a scale of 1"=50'.

2.3.1 Required Information

Depict and label all required pavement markings to indicate color, width, and spacing as appropriate on each sheet. While it is not necessary to label each pavement item, at least one note referencing the applicable standard should be included on each sheet (see examples in Appendix A).

Show the location of required signs symbolically and give a representation of the sign face. Orient the symbol, sign code and sign face to correspond to the direction of travel of the motorists for which they are intended. Reference the placement station, sign code and size of each sign in a uniform manner throughout the plan set (see examples in Appendix A).

2.3.2 Sheet Layout

Show a north arrow and a graphical scale on each plan sheet. Include base information from the roadway design file to allow adequate depiction of required signing and marking. Coordinate signing and marking items with utilities, right-of-way, and drainage structures. Include the following list of base data on each sheet:

- Edge of pavement
- Driveways
- Project center-line with stationing text
- Proposed right-of-way (Delete any existing R/W that falls within the proposed R/W)
- Existing roadway (show only where proposed and existing tie together)

- Names of intersecting roads
- Any sidewalks, guardrail, or barrier walls
- Drainage structures

2.4 Summary of Quantities Sheets

Quantities for pavement markings and signs are presented on separate sheets. The Summary of Quantities for Pavement Markings sheet lists the type and quantity for traffic stripe, raised pavement markers, arrows, words and symbols. It also lists the quantities for the removal of pavement markings.

The Summary of Quantities for Standard Signs sheet has the sign and sign post quantities presented in a tabular format. Each sign is listed separately by station and sign code. No two separate sign installations shall have the same station number. Offset by one foot, if necessary. There are separate columns for Type 1 and Type 2 sign material and Type 3 and Type 6 reflective sheeting material. Sign posts are separated into Type 7, 8 and 9 posts. If there is more than one sign on a post, then the post is listed in the same row as the first sign on the post.

Totals from the Summary of Quantities sheets shall be shown on the Detailed Estimate Sheet. The Detailed Estimate Sheet shall list each pay item used in the project arranged in numerical order. The pay item description shown for signing and pavement markings shall be consistent with the latest edition of the Pay Item Index. The estimated quantity for each pay item shall be provided and should match the Summary of Quantities Sheets except for nominal rounding to the next whole integer. A current Pay Item Index is available from the Office of Contracts Administration and may also be available on the GDOT website.

The following pages are examples of the Summary of Quantities sheets.

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

NOTES: 1. TYPE 1, 2, AND 3 PAVEMENT MARKERS SHALL BE SPACED AS SPECIFIED ON THE RAISED PAVEMENT MARKERS LOCATION DETAILS.

NOTE: PREFORMED 8" SKIP CONTRAST WILL BE 5" SKIP WHITE STRIPE BETWEEN TWO 1 1/2" BLACK STRIPES.

NOTE: ALL ARROWS SHALL BE WHITE UNLESS OTHERWISE SPECIFIED. SEE PLANS FOR LOCATION.

SEE PLANS FOR LOCATION AND
DETAIL REFERENCE.

NOTE: ALL WORDS SHALL BE WHITE UNLESS OTHERWISE SPECIFIED. SEE PLANS FOR LOCATION.

SEE PLANS FOR LOCATION AND
DETAIL REFERENCE.

NOTE: ALL SYMBOLS SHALL BE WHITE UNLESS OTHERWISE SPECIFIED. SEE PLANS FOR LOCATION.

SEE PLANS FOR LOCATION.

TOTALS

GA MILE

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY AND DESIGN

DRAWING No.

2.5 General Notes

The following is an example of the General Notes & Detail Sheet that shall be included on the last sign summary sheet in the plan set. A current electronic general notes file may be available from the GDOT website.

STATE		PROJECT NUMBER	SHEET TOTAL SHEETS
GA.			
1.	ALL STANDARD HIGHWAY SIGNS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, AND THE GEORGIA SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND/OR SPECIAL PROVISIONS.	7.	SIGN ASSEMBLIES SHALL BE MOUNTED ON ALUMINUM OR GALVANIZED STEEL STRAP FRAMES. FOR DETAILS AND STRAP SPECIFICATIONS REFER TO SIGN ASSEMBLY-TYPICAL FRAMING DETAILS.
2.	SIGN ERECTION STATIONS ARE APPROXIMATE AND MAY BE ADJUSTED TO MEET FIELD CONDITIONS WHERE NECESSARY, BUT SHALL BE WITHIN THE LIMITATIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION. NO SIGN LOCATION SHALL BE CHANGED BY THE CONTRACTOR OR BY THE PROJECT ENGINEER WITHOUT PRIOR APPROVAL FROM THE OFFICE OF TRAFFIC SAFETY AND DESIGN.	8.	TYPE III (ENCAPSULATED LENS) REFLECTIVE SHEETING SHALL BE USED FOR ALL STANDARD HIGHWAY SIGNS REQUIRING REFLECTORIZED BACKGROUNDS EXCEPT AS SPECIFIED BELOW OR SPECIFIED OTHERWISE IN THE PLANS. EITHER CLASS 1 OR CLASS 2 ADHESIVE BACKING IS PERMISSIBLE.
3.	ALL STANDARD HIGHWAY SIGNS SHALL BE ERECTED AT A HEIGHT OF 7 FEET ABOVE THE NORMAL EDGE OF PAVEMENT TO THE BOTTOM OF THE SIGN OR ASSEMBLY.	9.	TYPE VI (WIDE ANGLE PRISMATIC) REFLECTIVE SHEETING SHALL BE USED FOR ALL RED SERIES SIGNS (R1-1, R1-2, R1-3A, R1-4A, R5-1, R5-1A).
4a.	HORIZONTAL CLEARANCE FOR STANDARD HIGHWAY SIGNS ON INTERSTATE HIGHWAYS SHALL BE 32 FEET FROM THE NORMAL EDGE OF PAVEMENT TO THE NEARER EDGE OF THE SIGN(S), UNLESS SPECIFIED OTHERWISE IN THE PLANS. HORIZONTAL CLEARANCE FOR STANDARD HIGHWAY SIGNS ON RAMPS SHALL BE 2 FEET FROM THE NORMAL EDGE OF PAVED SHOULDER, OR EDGE OF GRADED SHOULDER WHEN PRESENT.	10.	TYPE VI (WIDE ANGLE PRISMATIC) FLUORESCENT YELLOW GREEN REFLECTIVE SHEETING SHALL BE USED FOR SCHOOL ZONE (S1-1, S2-1, S3-1, S4-3, AND THE TOP PORTION OF THE S5-1) SIGNS, BICYCLE CROSSING (W11-1) SIGNS, AND PEDESTRIAN CROSSING (W11-2 AND W11A-2) SIGNS. SIGNS WITHIN THE SAME ASSEMBLY AS THE SCHOOL ZONE SIGNS SPECIFICALLY LISTED ABOVE AND ALL REGULATORY SIGNS PLACED AS PART OF THE SCHOOL ZONE SIGNING SHALL HAVE TYPE VI (WIDE ANGLE PRISMATIC) REFLECTIVE SHEETING BACKGROUNDS OF THE APPROPRIATE COLOR.
4b.	HORIZONTAL CLEARANCE FOR STANDARD HIGHWAY SIGNS ON ALL OTHER ROADWAYS SHALL BE 6 FEET FROM THE EDGE OF THE PAVED SHOULDER OR 12 FEET FROM THE NORMAL EDGE OF PAVEMENT TO THE NEARER EDGE OF THE SIGN(S), WHICHEVER IS GREATER. THE HORIZONTAL CLEARANCE IN NON-MOUNTABLE CURB SECTIONS SHALL BE AT LEAST 2 FEET FROM THE CURB FACE TO THE NEARER EDGE OF THE SIGN(S).	11.	TYPE VI (WIDE ANGLE PRISMATIC) FLUORESCENT YELLOW REFLECTIVE SHEETING SHALL BE USED FOR ALL WARNING SIGNS.
4c.	HORIZONTAL CLEARANCE FOR STANDARD HIGHWAY SIGNS MOUNTED BEHIND GUARD RAIL SHALL BE 6 FEET FROM THE FACE OF THE GUARD RAIL TO THE NEARER EDGE OF THE SIGN(S).	12.	A 1/2 INCH MINIMUM AIR SPACE SHALL BE REQUIRED BETWEEN ALL SIGN PLATES WITHIN AN ASSEMBLY.
5.	SINGLE PLATE, HORIZONTAL RECTANGULAR SIGNS OVER 48 INCHES IN WIDTH SHALL BE MOUNTED ON TWO POSTS WITH 2 EACH 2 INCH x 1/2 INCH x (WIDTH OF SIGN) ALUMINUM OR GALVANIZED STEEL STRAPS. THE STRAPS SHALL BE FLUSH WITH THE BACK OF THE SIGN WITH ONE EACH ACROSS THE TOP AND BOTTOM OF THE SIGN. THE CENTERLINE OF EACH POST SHALL BE INSET 1/6TH OF THE SIGN WIDTH FROM THE EDGE OF THE SIGN. SIGN PLATE BOLT HOLES SHALL BE 3/8 INCH DIAMETER, DRILLED OR PUNCHED, AS SHOWN ON THE SIGN PLATE DETAILS.	13.	WHERE SIGNS WITHIN AN ASSEMBLY EXTEND BELOW THE STANDARD MOUNTING HOLES ON THE POST(S), ADDITIONAL 3/8 INCH DIAMETER HOLES(S), DRILLED OR PUNCHED, SHALL BE REQUIRED TO PROPERLY MOUNT THE ASSEMBLY.
6.	EACH 42 OR 48 INCH WIDE x 18 OR 24 INCH HIGH SIGN REQUIRES ONE 2 INCH x 1/2 INCH x (WIDTH OF SIGN) ALUMINUM OR GALVANIZED STEEL STRAP LOCATED IN THE CENTER OF THE SIGN AND FLUSH WITH THE BACK OF THE SIGN.	14.	INTERSTATE SHIELDS SHALL CONTAIN THE WORD GEORGIA. ALL INTERSTATE, U.S., AND GEORGIA SHIELDS REQUIRING ALT, BUS, CONN, LOOP, OR SPUR SHALL USE 4 INCH SERIES "D" LETTERS. REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, FOR DETAILS.
		15.	FOR DETAILS OF SPECIAL DESIGN HIGHWAY SIGNS, SEE DETAILS OF MISCELLANEOUS SIGNS.
		16.	REFER TO PLAN SHEETS FOR LOCATION OF THE DISTRICT ENGINEERS' OFFICE TO BE SHOWN ON ALL R552-1 (LIMITED ACCESS) SIGNS IN THIS PROJECT, IF ANY.
		17.	CONTRACTOR WILL, AS REQUESTED BY THE DISTRICT TRAFFIC OPERATIONS ENGINEER, BE REQUIRED TO REMOVE ANY EXISTING SIGNS THAT ARE DUPLICATED OR ARE CONTRARY TO THESE SIGN PLANS.

DATE	REVISIONS	GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE OF TRAFFIC SAFETY AND DESIGN

SIGNING DESIGN STANDARDS

3.1 General

3.1.1 General Signing Guidelines

The following are design guidelines regarding the development of signing and pavement marking plans.

1. Sign sizes are determined by the roadway classification. The Standard sign size (as defined in the *Standard Highway Signs* booklet) shall be used on two-lane and four-lane roads, regardless of speed limit, on four-lane divided roads with speed limits less than 55 m.p.h., and on five-lane roads with a speed limit of 45 m.p.h. or less. With the exception of route confirmation signing, the Expressway sign size is to be used on four-lane roads divided with speed limits 55 m.p.h. or greater and on five-lane roads with speed limits greater than 45 m.p.h. The Freeway sign size is to be used on all limited access roads.
2. All school zone signs (S1-1, S2-1, S3-1, S4-3, and the top portion of the S5-1), bicycle crossing signs (W11-1), and pedestrian crossing signs (W11-2 and W11A-2) shall have Type VI (Wide Angle Prismatic) fluorescent yellow-green reflective sheeting backgrounds. In addition, signs within the same assembly as those school zone signs specifically listed above and all regulatory signs placed as part of the school zone signing shall have Type VI (Wide Angle Prismatic) reflective sheeting backgrounds of the appropriate color.
3. All red series signs (R1-1, R1-2, R1-3a, R1-4a, R5-1, and R5-1a) shall have Type VI (Wide Angle Prismatic) reflective sheeting backgrounds. All other regulatory signs shall have Type III (High Intensity) reflective sheeting backgrounds, unless specified otherwise.
4. All warning signs shall have Type VI (Wide Angle Prismatic) reflective sheeting backgrounds.
5. Single plate signs greater than 9 square feet in area or greater than 48 inches in width shall be erected on two posts.

6. Signs shall not be placed back-to-back on one post unless they are identical in size and shape.
7. The R6-3 (Divided Highway Crossing) sign shall be used under R1-1 signs only on four-lane divided roadways. The R6-1 (One Way) signs shall be used on all divided roadways with medians that are greater than 30 feet wide. Divided roadways with medians less than 30 feet do not require R6-1 signs.
8. The R5-1a signs (Wrong Way) shall be placed 250 feet from the median nose, but not greater than 200 feet from the R5-1 (Do Not Enter) signs.
9. Keep Right (R4-7) signs shall be installed only at the beginning of a physical median (raised or depressed) and on raised medians only when the median width (face-of-curb to face-of-curb distance) is six (6) feet or greater. Keep Right signs are not intended for use at intermediate median openings.

3.1.2 Pay Items

The following standard pay items are those commonly used for signs.

636-1020	SF	Highway Signs, TP 1 Matl, Refl Sheeting, TP 3
636-1029	SF	Highway Signs, TP 2 Matl, Refl Sheeting, TP 3
636-1031	SF	Highway Signs, TP 1 Matl, Refl Sheeting, TP 6
636-1032	SF	Highway Signs, TP 2 Matl, Refl Sheeting, TP 6

The pay item specifies the type of material to be used. The first specification refers to the backing. Type 1 material is used on signs with areas less than or equal to nine (9) square feet while Type 2 material is used on signs greater than nine (9) square feet in area. Type 1 and Type 2 material refers to the sign blank itself. The difference between Type 1 and Type 2 material is the thickness of the sign blank (.08" for Type 1 and .10" for Type 2).

The second specification in the signing pay items refers to the reflective sheeting. Type 3 is an encapsulated, prismatic lens that is commonly referred to as high intensity. Type 6 is a

wide angle prismatic lens. The use of each type of reflective sheeting is defined in the General Signing and Pavement Marking Guidelines in the previous section.

3.2 Regulatory Signs

3.2.1 Stop Signs

Stop signs on state routes or on roads approaching state routes shall be 36 inches in width.

3.2.2 Yield Signs

Yield signs shall be 36 inches on conventional roads and 48 inches on expressways.

3.2.3 Speed Limit Signs

Speed limits shall be confirmed after every junction with a numbered (State or U.S.) route. In rural areas, in the absence of junctions with numbered routes, speed limits are to be confirmed at two (2) mile intervals. In more developed or higher vehicular volume areas, this interval should be reduced, based on traffic engineering judgement.

3.3 Warning Signs

The setback distance for intersection warning signs shall be as recommended in the Manual on Uniform Traffic Control Devices (MUTCD). This distance shall be measured from either the radius point of the crossroad when there is no deceleration lane or from the beginning of the taper for a deceleration lane. When both conditions exist at the same location, the setback distance shall be measured from the beginning of the taper for the deceleration lane. W3-1a and W3-3 signs may be measured from the intersection stopping point (stopbar).

3.4 Guide Signs

3.4.1 Route Markers

Route Markers are either 24 inches in width (1 or 2 digit numbers) or 30 inches in width (3 digit numbers) on all roads, except on limited access roads where they are either 36 inches in width (1 or 2 digit numbers) or 45 inches in width (3 digit numbers). Cardinal direction signs are 24 inches in width on all roads, except on limited access roads where they are 30 inches in width.

When more than one type of route marker is used within an assembly, the order of preference is Interstate, U.S., State (left to right, top to bottom). Within the same classification of route marker, the order of preference is from lowest number to highest number.

3.4.1.1 Placement Guidelines

Routes shall be confirmed after every junction with a numbered (State or U.S.) route. In rural areas, in the absence of junctions with numbered routes, the routes are to be confirmed at two (2) mile intervals. In more developed or higher vehicular volume areas, this interval should be reduced, based on traffic engineering judgement.

Figures 3-1 through 3-3 provide typical route signing through different cases of intersecting routes. These figures show four-lane divided roads, but they would also apply to two-lane roads.

3.4.1.2 State Line Signing

Figure 3-4 provides guidelines for signs that shall be installed on all non-limited access routes entering the State.

3.4.2 Destination (D1), Distance (D2), and General Information (I) Signs

D1, D2, and I signs shall have green reflectorized backgrounds with white reflectorized legends, borders, and symbols. The borders shall be determined by sign height as shown in the table below. The corner radii shall be as shown in the Appendix of the Standard Highway Signs booklet.

SIGN HEIGHT	BORDER
12"	3/8"
24"	1/2"
36"	5/8"
48"	3/4"

3.4.3 Road Name (D3) Signs Used In Conjunction With Warning Signs

These signs are supplemental to warning signs and shall have yellow reflectorized backgrounds with black legends, borders, and symbols. The margins and borders shall be determined by sign height as shown in the table below. The corner radii shall be as shown in the Appendix of the Standard Highway Signs booklet.

SIGN HEIGHT	MARGIN	BORDER
12"	3/8"	5/8"
24"	1/2"	3/4"
36"	5/8"	7/8"
48"	3/4"	1"

Road name signs (D3) shall be used only on four-lane divided roadways in rural areas when the side road has a local name. County Road numbers shall not be used on D3 road name signs. The D3 signs shall be installed below the Advance Intersection Warning sign or the Signal Ahead sign (when used).

3.4.4 Direction Signs (DBRN) For Recreation and Cultural Interest Areas

Directional signs that are recreationally or culturally oriented shall be designated as DBRN signs. These signs shall have brown reflectorized backgrounds with white reflectorized legends, borders, and symbols. The borders shall be determined by sign height as shown in the table for D1, D2, and I signs. The corner radii shall be as shown in the Appendix of the Standard Highway Signs booklet. The symbol code for the signs is shown in Table 3-1.

3.4.5 Tourist Oriented Directional Signs (TODS)

Directional signs used for tourist-oriented purposes shall be designated as DB signs. They shall have blue reflectorized backgrounds with white reflectorized legends, borders, and symbols.

The borders for TODS shall be determined by sign height as shown previously in the table for D1, D2, and I signs. The corner radii shall be as shown in the Appendix of the Standard Highway Signs booklet.

Table 3-1. Category Chart for Symbols

General Information		Accommodation Services		Water Recreation	
Automobile	RG-010	Airport	RA-010	Boat Tours	RW-010
Bear Viewing Area	RG-020	Bus Stop	RA-020	Canoeing	RW-020
Dam	RG-030	Campfire	RA-030	Diving	RW-030
Deer Viewing Area	RG-040	Elevator	RA-040	Diving (Scuba)	RW-040
Drinking Water	RG-050	Kennel	RA-050	Fishing	RW-050
Environmental Study	RG-060	Laundry	RA-060	Marine Recreation	RW-060
Area		Locker*	RA-070	Area	
Falling Rocks *	RG-070	Parking	RA-080	Motorboating	RW-070
Firearms	RG-080	Rest Room (Men)	RA-090	Ramp (Launch)	RW-080
Fish Hatchery	RG-090	Rest Room (Women)	RA-100	Rowboating	RW-090
Information	RG-100	Shelter (Sleeping)	RA-110	Sailboating	RW-100
Leashed Pets *	RG-110	Shelter (Trail)	RA-120	Skiing (water)	RW-110
Lighthouse	RG-120	Showers *	RA-130	Surfing	RW-120
Litter Container	RG-130	Family Rest Room	RA-150	Swimming	RW-130
Lookout Tower	RG-140	Helicopter	RA-160	Wading	RW-140
Ped Xing *	RG-150			Fishing Pier	RW-160
Point of Interest	RG-160			Hand Launch	RW-170
Ranger Station	RG-170	Land Recreation		Kayak	RW-190
Smoking	RG-180	Amphitheater	RL-010	Wind Surf	RW-210
Truck	RG-190	Climbing	RL-020		
Tunnel	RG-200	Climbing (Rock)	RL-030		
Watchable Wildlife	RG-210	Hunting	RL-040		
Dog	RG-240	Playground	RL-050	Winter Recreation	
Seaplane	RG-260	Rock Collecting	RL-060	Skating (ice)	RS-010
		Spelunking	RL-070	Ski Jumping	RS-020
		Stable	RL-080	Skiing (Bobbing)	RS-030
Motorist Services		Trail (Bicycle)	RL-090	Skiing (Cross Country)	RS-040
Camping (Tent)	RM-010	Trail (Hiking)	RL-100	Skiing (Downhill)	RS-050
Camping (Trailer)	RM-020	Trail (Horse)	RL-110	Sledding	RS-060
Ferry	RM-030	Trail (Interpretive, Auto)	RL-120	Snowmobiling	RS-070
First Aid	RM-040	Trail (Interpretive, Ped.)	RL-130	Snowshoeing	RS-080
Food	RM-050	Trail/Road (4 WD Veh.)	RL-140	Winter Recreation	RS-090
Gas	RM-060	Trail (Trail Bike)	RL-150	Area	
Grocery Store	RM-070	Tramway	RL-160	Chairlift	RS-100
Handicapped	RM-080	All-Terrain Vehicle	RL-170		
Lodging	RM-090	Archer	RL-190		
Post Office	RM-110	Hang Glider	RL-210		
Picnic Area	RM-120				
Picnic Shelter	RM-130				
Rest Room	RM-140				
Telephone	RM-150				
Trailer Sanitary Station	RM-160				
Viewing Area	RM-170				
Motor Home	RM-200				
Group Camping	RM-210				
Group Picnicking	RM-220				

*For Non-Road Use

3.4.6 Lettering Guidelines

There shall not be more than a one series difference between legends within a sign, (for example, use Series “D” and “C,” not Series “D” and “B”).

A Legend Analysis Program can be obtained from the Office of Traffic Safety and Design Group.

Figures 3-5 through 3-8 provide guidelines for lettering and sign layout for destination signs, road name signs and political boundary signs.

3.5 Overhead Span Wire Signs

Overhead span wire signs shall be used whenever there are multiple turn lanes in any one direction. Their use is recommended at signalized state, U.S. route or interstate ramp intersections in urban areas with multiple turn lanes. They may be used in other situations based upon engineering judgment. See Overhead Signing Detail (Figure 3-9) for proper placement on the span wire.

Typical sign installations on surface streets will be post-mounted in accordance with the MUTCD. Certain special situations may warrant the installation of overhead signing. The following is a list of situations that may warrant the installation of overhead signing in lieu of a post-mounted sign, but each individual occurrence must be properly studied and concurrence received from the Office of Traffic Safety and Design before a final determination is made:

- Traffic volumes at or near capacity
- Complex intersection and/or signalization design
- Three or more traffic lanes in each direction
- Restricted sight distance
- Closely spaced intersections
- Multi-lane turns (same direction)

- High percentage of truck traffic
- Very high travel speeds
- Insufficient space for ground signs
- Dropping a through lane as a turn-only lane

All overhead span wire signs shall have Type 6 reflecting sheeting. Figure 3-9 provides guidelines for locating overhead signs.

3.6 Sign Posts

3.6.1 Pay Items

The following pay items are commonly used for signposts.

636-2070	LF	Galv Steel Posts, Type 7
636-2080	LF	Galv Steel Posts, Type 8
636-2090	LF	Galv Steel Posts, Type 9
636-3010	EA	Ground Mounted Breakaway Sign Support

Types 7, 8, and 9 are square tube posts. Type 8 posts are larger than Type 9 posts. Type 9 posts are larger than Type 7 posts. Only Type 8 posts may be installed on a breakaway sign support.

3.6.2 Wind Loads

The primary factor in selecting the appropriate type of post is the amount of resistance required to withstand the applied wind load. Use Table 3-2 to select the proper square tube post.

Table 3-2. SIGN POST SELECTION CHART

70 MPH WIND LOAD CHART • 15% GUST FACTOR

SIGN CENTROID	GROUND MOUNTED BREAKAWAY SIGN SUPPORT NOT REQUIRED			GROUND MOUNTED BREAKAWAY SIGN SUPPORT REQUIRED				
	TYPE 7 2" 14 GA.		TYPE 9 2-1/4" 14 GA.	TYPE 8 2-1/2" 12 GA.	TYPE 8W / TYPE 9 INSERT *			
	1 POST	2 POST	1 POST	1 POST	2 POST	3 POST	1 POST	2 POST 3 POST
	SQUARE FOOTAGE			SQUARE FOOTAGE				
6'	13.50	27.00	19.25	30.00	60.00	90.00	49.25	98.50 147.75
7'	11.60	23.20	16.50	25.75	51.50	77.25	42.25	84.50 126.75
8'	10.15	20.30	14.45	22.55	45.10	67.65	37.00	74.00 111.00
9'	9.00	18.00	12.85	20.00	40.00	60.00	32.85	65.70 98.55
10'	8.10	16.20	11.50	18.00	36.00	54.00	29.55	59.10 88.65
11'	7.40	14.80	10.50	16.40	32.80	49.20	26.90	53.80 80.70
12'	6.80	13.60	9.65	15.00	30.00	45.00	24.65	49.30 73.95
13'	6.25	12.50	8.90	13.85	27.70	41.55	22.75	45.50 68.25
14'	5.80	11.60	8.25	12.90	25.80	38.70	21.15	42.30 63.45
15'	5.00	10.00	6.45	10.10	20.20	30.30	16.55	33.10 49.65
16'	4.70	9.40	6.05	9.45	18.90	28.35	15.50	31.00 46.50
17'	4.40	8.80	5.70	8.90	17.80	26.70	14.60	29.20 43.80
18'	4.15	8.30	5.40	8.40	16.80	25.20	13.80	27.60 41.40
19'	3.95	7.90	5.10	7.95	15.90	23.85	13.05	26.10 39.15
20'	3.75	7.50	4.85	7.55	15.10	22.65	12.40	24.80 37.20

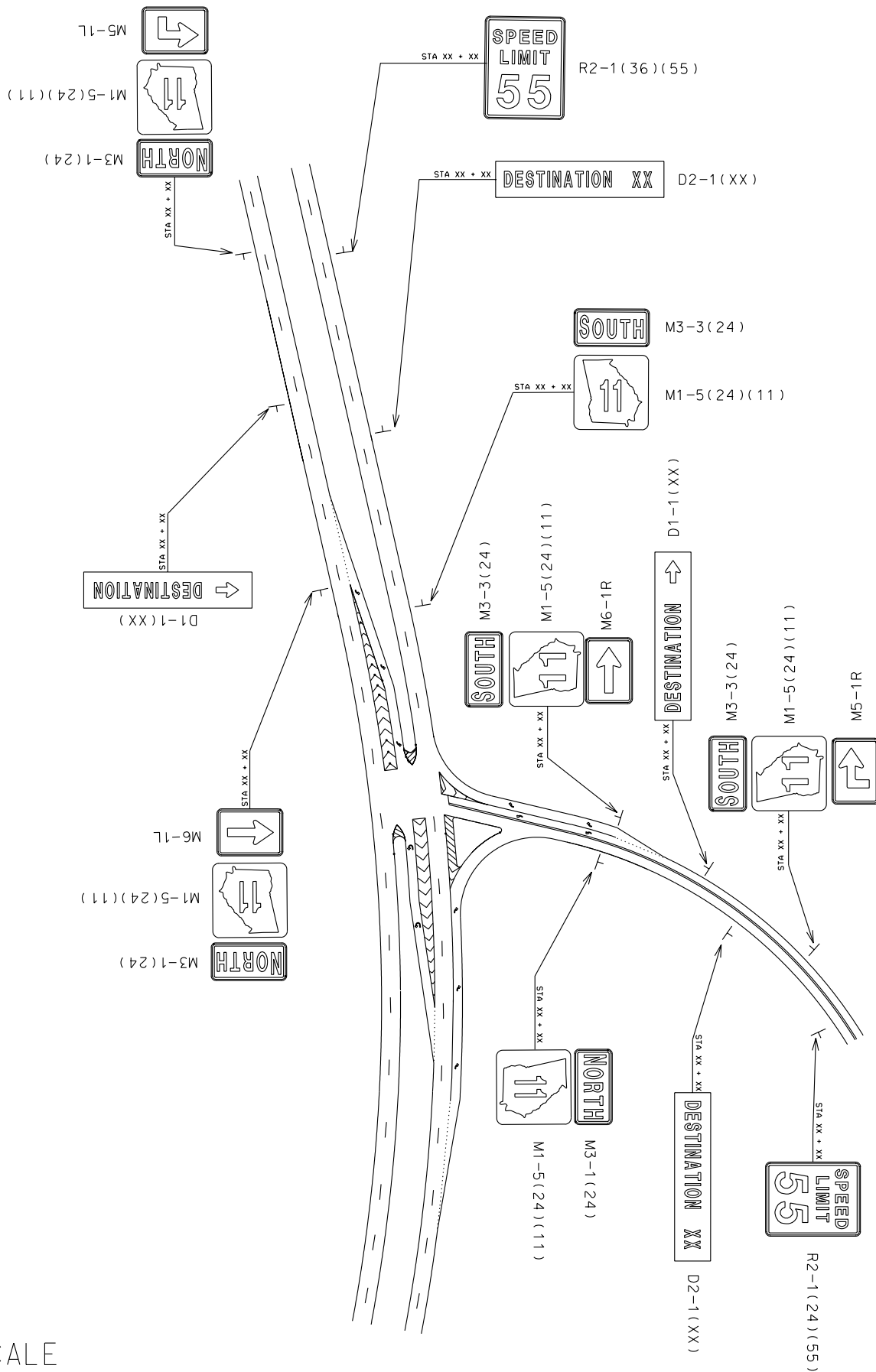
SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN PLUS HALF THE HEIGHT OF SIGN.

EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) PLUS 7 FT = 9' CENTROID.

SIGN PLATE SHALL NOT EXCEED 48" IN WIDTH ON A SINGLE POST.

TYPE 9 INSERT SHALL BE A CONTINUOUS POST INSERTED INTO TYPE 8 POST WHERE REQUIRED. THE INSERT POST SHALL EXTEND FROM THE BOTTOM OF THE SLIP BASE UPPER ASSEMBLY TO 4" BELOW THE BOTTOM OF THE SIGN. THE INSERT POST SHALL NOT EXCEED ABOVE THE BOTTOM OF THE SIGN. PAYMENT FOR THE INSERT POST SHALL BE PER LINEAR FOOT OF TYPE 9 POST.

GROUND MOUNTED BREAKAWAY SIGN SUPPORT WILL BE MEASURED AND PAID FOR SEPARATELY. THE COST FOR THIS WORK SHALL INCLUDE THE UPPER AND LOWER ASSEMBLY, STUB POST, CLASS "A" CONCRETE, ALL HARDWARE NECESSARY TO COMPLETE THE INSTALLATION, AND BE INCLUDED IN THE BID PRICE SUBMITTED FOR ITEM 636-3010



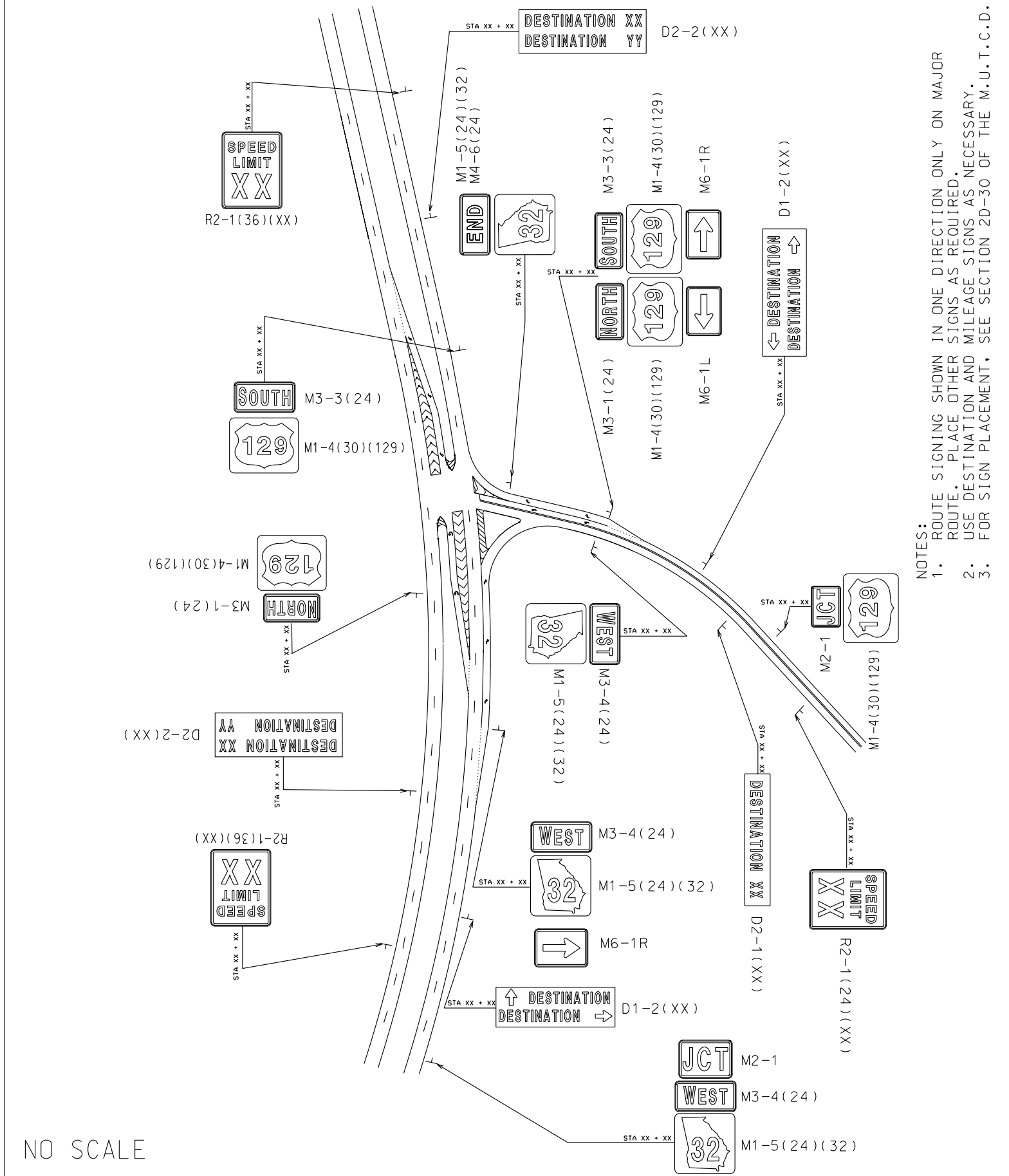
NOTES:
 1. ONLY ROUTE SIGNING SHOWN. PLACE OTHER SIGNS AS REQUIRED.
 2. USE DESTINATION AND MILEAGE SIGNS AS NECESSARY.
 3. FOR SIGN PLACEMENT, SEE SECTION 2D-30 OF THE M.U.T.C.D.

NO SCALE



ROUTE SIGNING FOR TURNING ROUTE

FIGURE 3-1



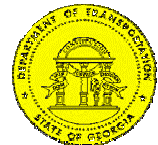
- NOTES:
1. ROUTE SIGNING SHOWN IN ONE DIRECTION ONLY ON MAJOR ROUTE. PLACE OTHER SIGNS AS REQUIRED.
 2. USE DESTINATION AND MILEAGE SIGNS AS NECESSARY.
 3. FOR SIGN PLACEMENT, SEE SECTION 2D-30 OF THE M.U.T.C.D.

NO SCALE



ROUTE SIGNING AT A "T" INTERSECTION

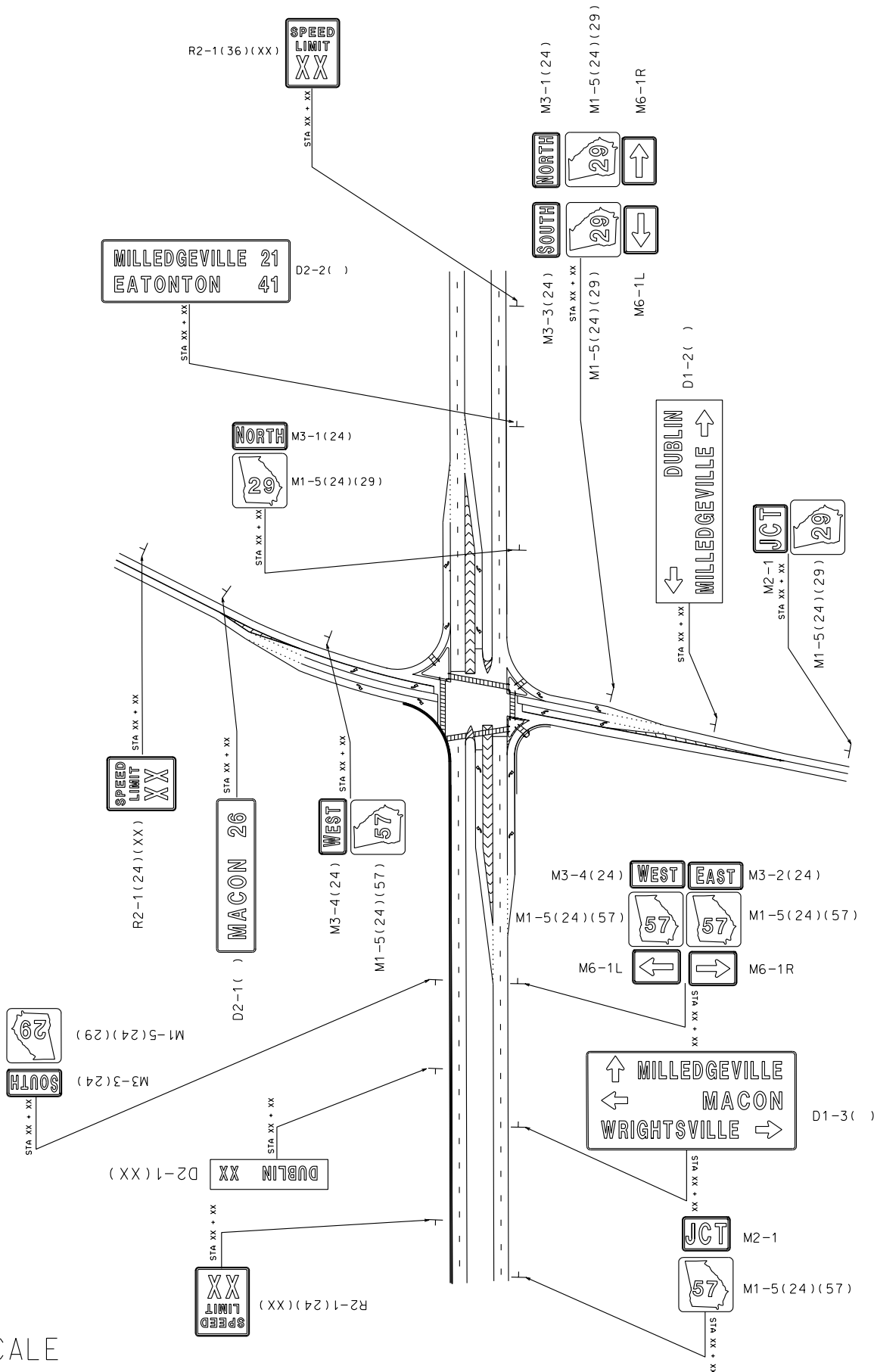
FIGURE 3-2






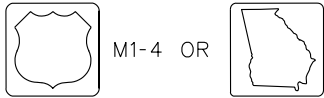
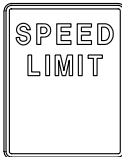





ROUTE SIGNING AT CROSSING ROUTES

FIGURE 3-3

NO SCALE



- NOTES:
1. ROUTE SIGNING SHOWN IN ONE DIRECTION ONLY ON BOTH ROUTES. PLACE OTHER SIGNS AS REQUIRED.
 2. USE DESTINATION AND MILEAGE SIGNS AS NECESSARY.
 3. FOR SIGN PLACEMENT, SEE SECTION 2D-30 OF THE M.U.T.C.D.

	SPECIAL DESIGN	2 LANE	__" x 48"
		4 LANE, 5 LANE, 4 LANE DIVIDED	__" x 48"
	SPECIAL DESIGN	2 LANE	72" x 48"
		4 LANE, 5 LANE, 4 LANE DIVIDED	72" x 48"
	M3-1, 2, 3, OR 4	2 LANE, 4 LANE, 5 LANE, 4 LANE DIVIDED	24" x 12"
		2 LANE, 4 LANE, 5 LANE, 4 LANE DIVIDED	24" (OR 30") x 24"
	R2-1	2 LANE, 5 LANE	24" x 30"
		4 LANE, 4 LANE DIVIDED	36" x 48"
	I550-1	2 LANE, 5 LANE	30" x 36"
		4 LANE, 4 LANE DIVIDED	30" x 36"
	R553-1	2 LANE, 5 LANE	24" x 30"
		4 LANE, 4 LANE DIVIDED	36" x 48"
	R560-1	2 LANE, 5 LANE	30" x 36"
		4 LANE, 4 LANE DIVIDED	30" x 36"
	R554-1	2 LANE, 5 LANE	24" x 30"
		4 LANE, 4 LANE DIVIDED	36" x 48"
	R560-2	2 LANE, 5 LANE	30" x 36"
		4 LANE, 4 LANE DIVIDED	30" x 36"

NOTES:

1. INSTALL SIGNS ON ALL ROUTES ENTERING THE STATE. IF THERE IS INSUFFICIENT SPACE FOR ALL SIGNS, THE ORDER OF PREFERENCE IS FROM TOP TO BOTTOM OF THIS CHART.
2. I550-1 SIGNS ARE INSTALLED ONLY IN COUNTIES THAT HAVE PERMITS TO OPERATE DETECTION DEVICES.



STATE LINE SIGNING SEQUENCE (NON-LIMITED ACCESS)

FIGURE 3-4



D1-1(Z)

LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Z VARIABLE, MULTIPLE OF 6"

6" SER. "B", "C", OR "D"
9" x 6" ARROW



D1-2(Z)

LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Z VARIABLE, MULTIPLE OF 6"

6" SER. "B", "C", OR "D"
9" x 6" ARROW
6" SER. "B", "C", OR "D"
9" x 6" ARROW



D1-3(Z)

LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Z VARIABLE, MULTIPLE OF 6"

6" SER. "B", "C", OR "D"
6" x 9" ARROW
6" SER. "B", "C", OR "D"
9" x 6" ARROW
6" SER. "B", "C", OR "D"
9" x 6" ARROW

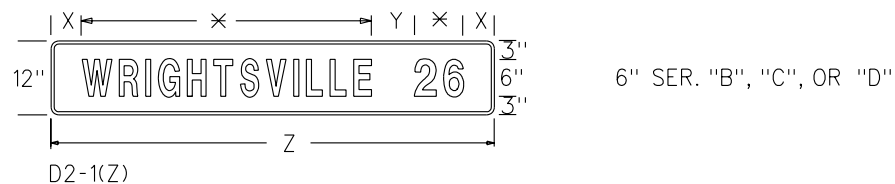
NOTES:

1. WHEN MORE THAN ONE ARROW ORIENTATION IS USED ON A SIGN, THE ARROW ORDER FROM THE TOP OF THE SIGN TO THE BOTTOM OF THE SIGN IS UP, LEFT, AND RIGHT.
2. SEE SECTION 3.4.6 FOR ALLOWABLE LETTER SERIES WITHIN A SIGN.



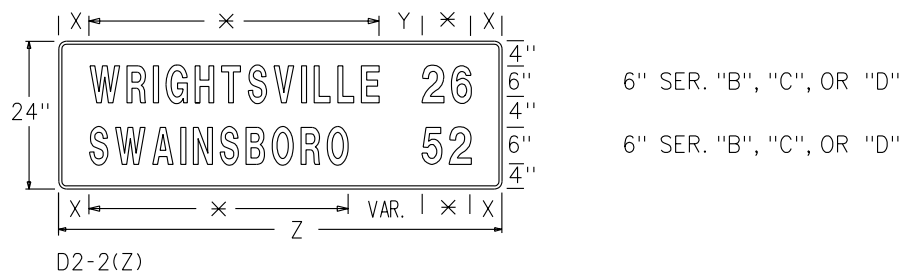
DETAILS OF DESTINATION SIGNS

FIGURE 3-5



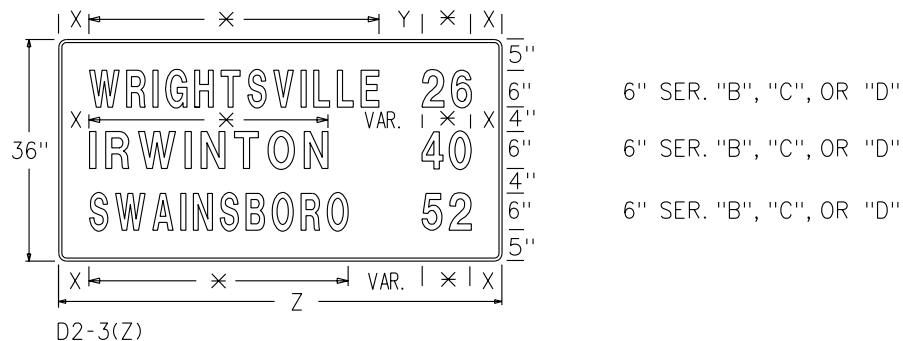
LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 6" MINIMUM
- Z VARIABLE, MULTIPLE OF 6"



LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 6" MINIMUM
- Z VARIABLE, MULTIPLE OF 6"



LEGEND:

- ✖ DETERMINED BY LEGEND ANALYSIS PROGRAM
- X VARIABLE, 3" MINIMUM, 6" MAXIMUM
- Y VARIABLE, 6" MINIMUM
- Z VARIABLE, MULTIPLE OF 6"

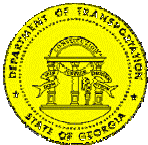
NOTE:

SEE SECTION 3.4.6 FOR ALLOWABLE LETTER SERIES WITHIN A SIGN.



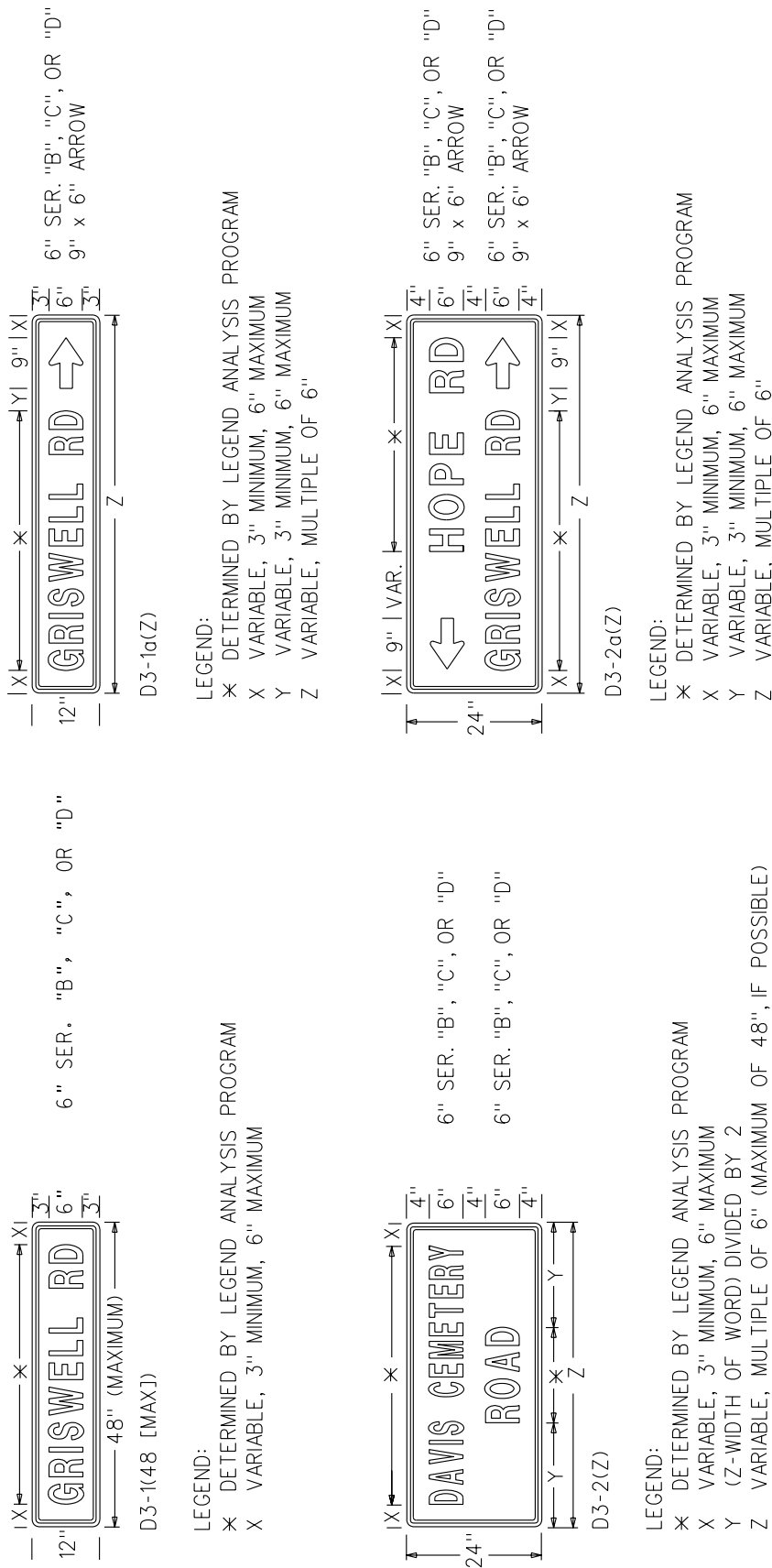
DETAILS OF MILEAGE SIGNS

FIGURE 3-6



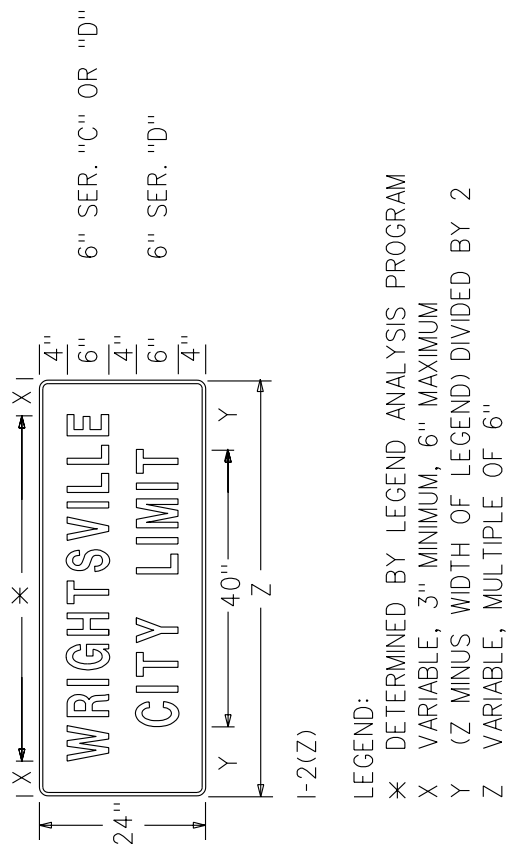
DETAILS OF ROAD NAME SIGNS

FIGURE 3-7

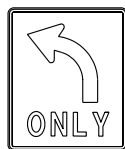


NOTES:

1. IF A ROADNAME WILL NOT FIT WITHIN A 36 INCH WIDE SIGN BLANK, USE A TWO LINE SIGN WITH THE LEGEND "ROAD," "AVENUE," "DRIVE," ETC., SPELLED OUT ON THE BOTTOM LINE. DO NOT PLACE A PORTION OF A MULTI-WORD ROADNAME ON THE BOTTOM LINE.
2. ROADNAME SIGNS OVER 36 INCHES IN WIDTH SHALL REQUIRE TWO POST ERECTION FOR THE ENTIRE SIGN ASSEMBLY.
3. SEE SECTION 3.4.6 FOR ALLOWABLE LETTER SERIES WITHIN A SIGN.

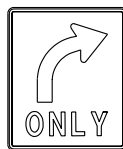


SINGLE TURNING LANE



R3-5L

NO NUMBERED ROUTE
(CENTER SIGN OVER LANE)



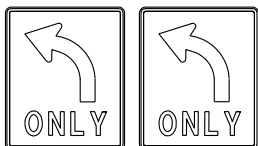
R3-5R



M-SPECIAL #

NUMBERED ROUTE
(CENTER SIGN ASSEMBLY OVER LANE)

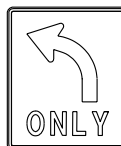
DUAL TURNING LANES



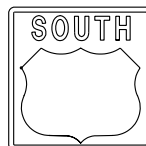
R3-5L

R3-5L

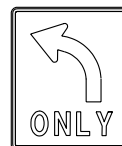
NO NUMBERED ROUTE
(CENTER SIGNS OVER EACH LANE)



R3-5L



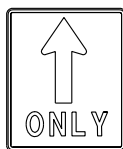
M-SPECIAL #



R3-5L

NUMBERED ROUTE
(CENTER SIGN ASSEMBLY OVER ALL TURN LANES)

ADVANCE TURN LANE



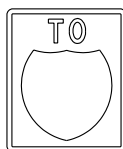
R3-5T



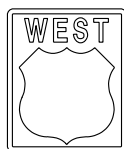
M-SPECIAL #

(CENTER SIGN ASSEMBLY OVER LANE)

CONFIRMATION/PULL THROUGH



M-SPECIAL #



M-SPECIAL #



M-SPECIAL #

(CENTER SIGN ASSEMBLY OVER ALL THROUGH LANES)

NOTES:

1. DO NOT USE R3-5T OR R3-5T_a SIGNS IN CONJUNCTION WITH PULL THROUGH SIGNS OR TO DESIGNATE THROUGH LANES UNLESS ROADWAY GEOMETRY IS UNCLEAR.
2. ADVANCE TURN LANE SIGNING IS USED WHEN A THROUGH LANE TRANSITIONS TO A TURN LANE AT AN INTERSECTION AND SIGNING IS NEEDED BEFORE AN INTERVENING INTERSECTION OR INTERSTATE RAMP.



OVERHEAD SIGNING

FIGURE 3-9

Section 4

PAVEMENT MARKING DESIGN STANDARDS

4.1 Materials

Pavement marking material is typically either thermoplastic or paint; however, wet reflective preformed marking material shall be used on bridges and all concrete pavement. Widths for longitudinal lines, hatching and stop bars are defined in the GDOT standard signing and marking details which are available in electronic format.

4.2 Pavement Markings

Edge lines shall be placed on all paved roadways, including curb and gutter sections. When the width of a roadway with curb and gutter exceeds the normal distance from face of gutter to face of gutter for the number of travel lanes, the edge line shall be placed the appropriate distance from the centerline markings, based upon a lane width of 12 feet. Edge lines shall not be placed on roadways with curb and gutter if parallel or angle parking is permitted.

Edge lines, lane lines, and centerlines shall be thermoplastic on all roadways. All other pavement markings shall be thermoplastic on all roadways.

All pavement markings for bicycle lanes, including the edge line separating vehicular and bicycle traffic, shall be paint. Appendix B contains examples of pavement markings for bicycle lanes.

4.3 Raised Pavement Markers

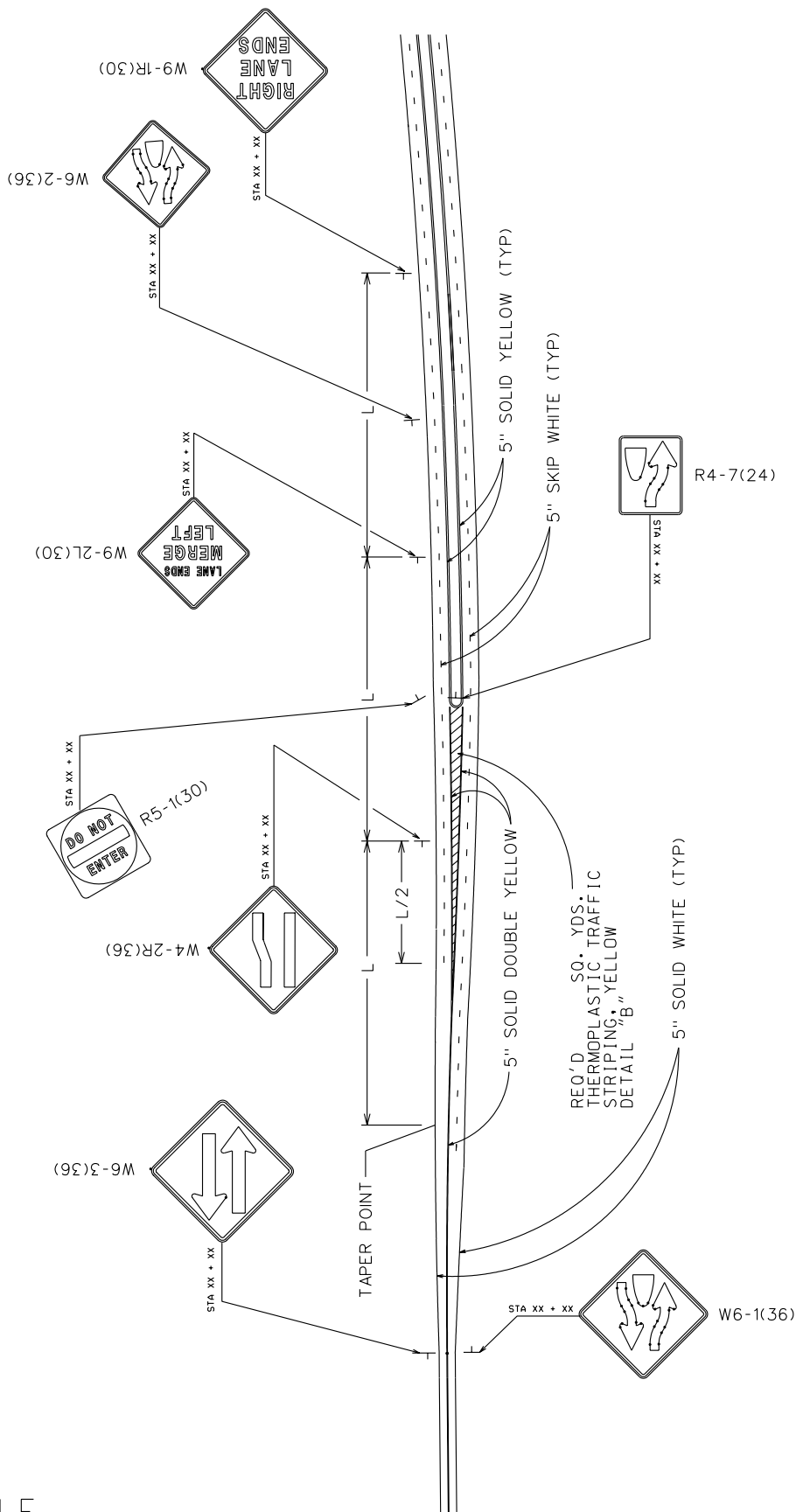
Raised pavement markers shall be provided in the design for all new roadways and on reconstruction where new pavement marking will be provided. The GDOT signing and marking details as referenced above, describe each type of marker and provide guidelines for the location and spacing of raised pavement markers.

4.4 Crosswalk Markings

The design of crosswalks shall be in accordance with the GDOT standard signing and marking details, which are available in electronic format.

Appendix A

Typical Signing and Pavement Marking for Rural Applications



NOTES:

1. "L" IS THE SPACING BETWEEN LANE WIDTH REDUCTION SIGNS, BASED UPON THE SPEED LIMIT AS DEFINED IN THE M.U.T.C.D.
2. IF THERE IS INSUFFICIENT ROOM FOR ALL THREE LANE WIDTH TRANSITION SIGNS, OMIT THE W9-2 SIGN. IF THERE IS INSUFFICIENT ROOM FOR THE REMAINING TWO LANE WIDTH TRANSITION SIGNS, USE THE W4-2 SIGN, ONLY.

NO SCALE



TRANSITION TO/FROM DIVIDED HIGHWAY

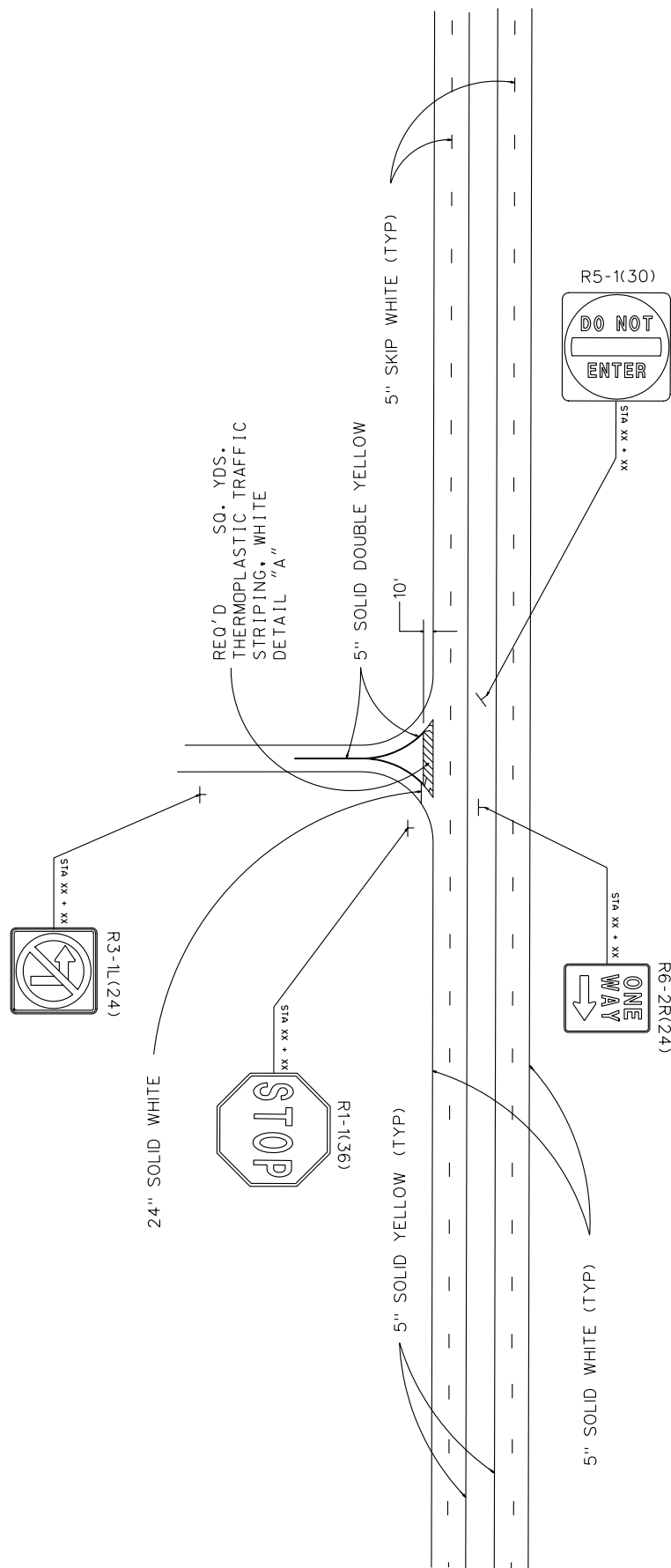
FIGURE A-1



SIGNING/MARKING AT A CLOSED MEDIAN "T" INTERSECTION

FIGURE A-2

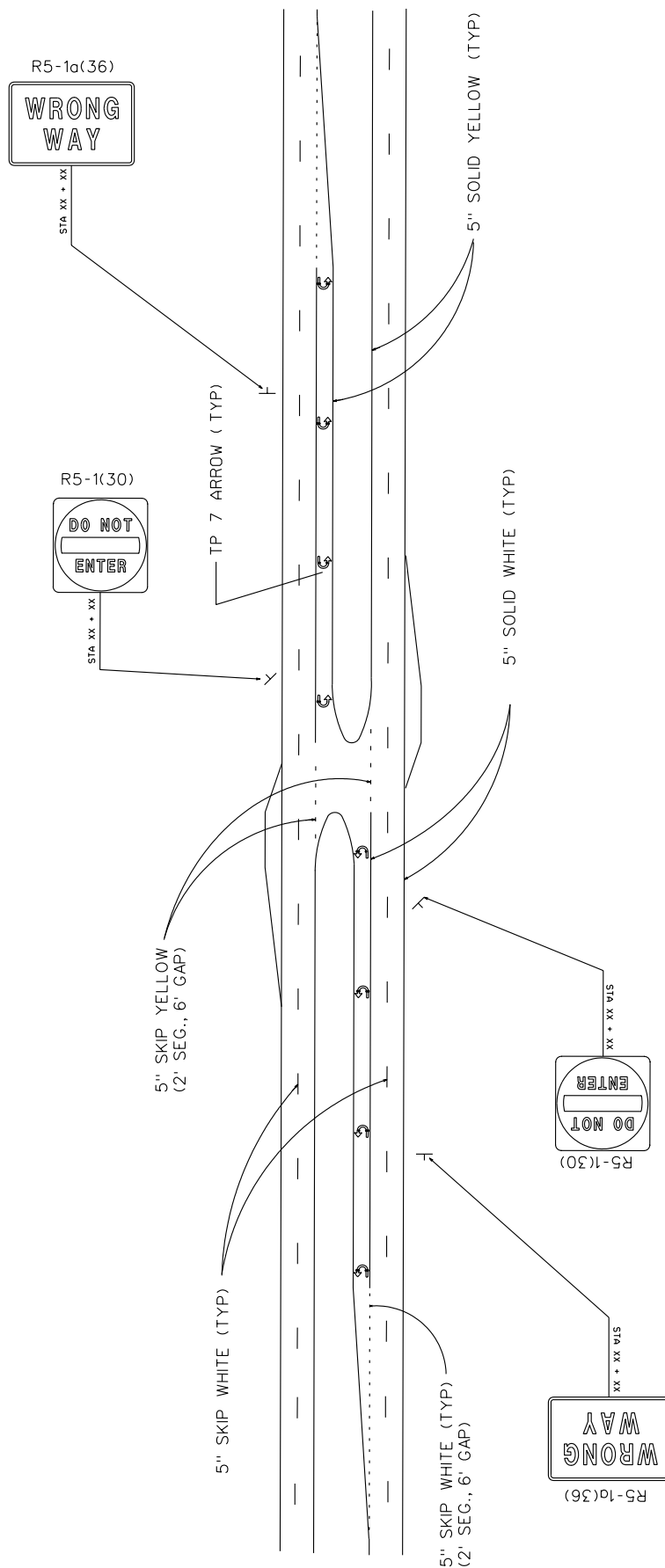
NO SCALE



NOTES:

1. R5-1(DO NOT ENTER) SIGN SHALL BE ORIENTED TOWARD THE SIDE STREET LANE APPROACHING THE MAINLINE.
2. STOP BAR SHALL BE PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1(STOP) SIGN).
3. W3-1a (STOP AHEAD) SIGN (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGN SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
4. R3-1L (NO LEFT TURN) SIGN SHALL BE PLACED HALFWAY BETWEEN THE R1-1 AND W3-1a SIGNS.

NO SCALE



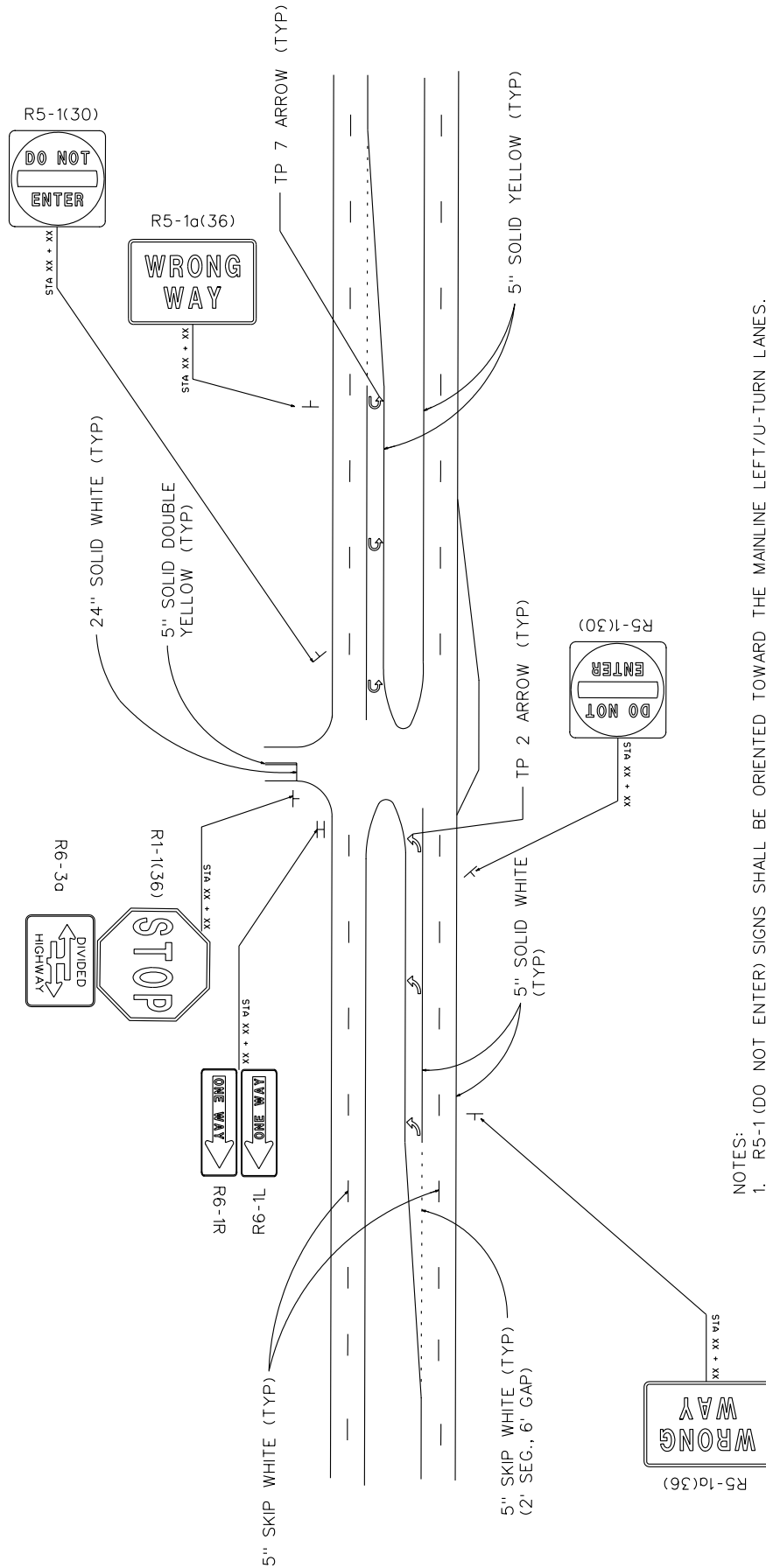
- NOTES:
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE OPPOSING U-TURN LANES.
 2. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.



SIGNING/MARKING AT TYPE A MEDIAN OPENING

FIGURE A-3

NO SCALE



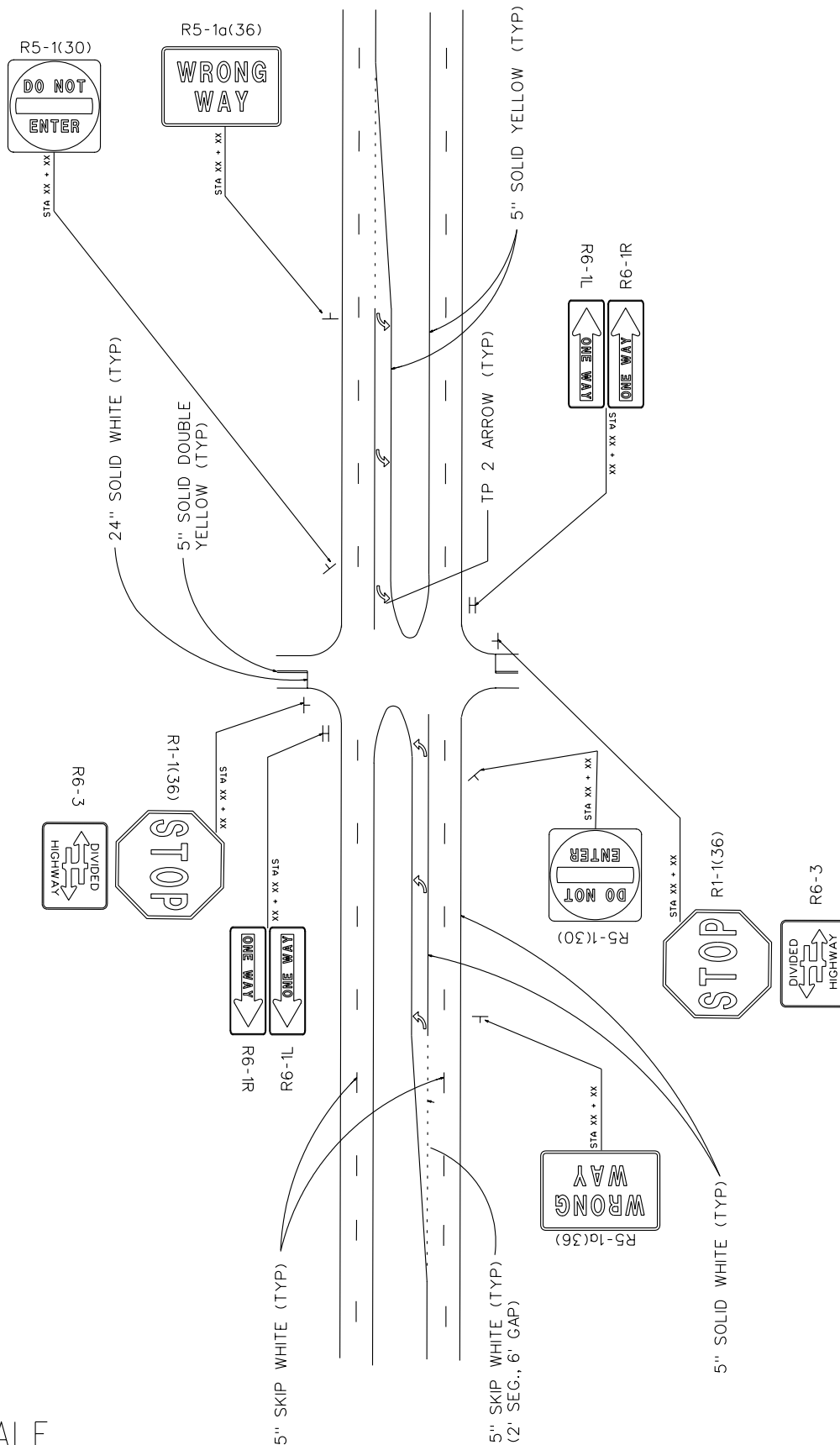
- NOTES:
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT/U-TURN LANES.
 2. STOP BAR SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1 (STOP) SIGN).
 3. R6-3a (DIVIDED HIGHWAY CROSSING) SIGN SHALL NOT BE USED IN URBAN AREAS.
 4. W3-1a (STOP AHEAD) SIGN (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGN SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
 5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
 6. R6-1R, R6-1L (ONE WAY) SIGN SHALL BE USED ONLY IF MEDIAN WIDTH IS GREATER THAN 30'



SIGNING/MARKING AT TYPE A MEDIAN "T" INTERSECTION

FIGURE A-4

NO SCALE



NOTES:

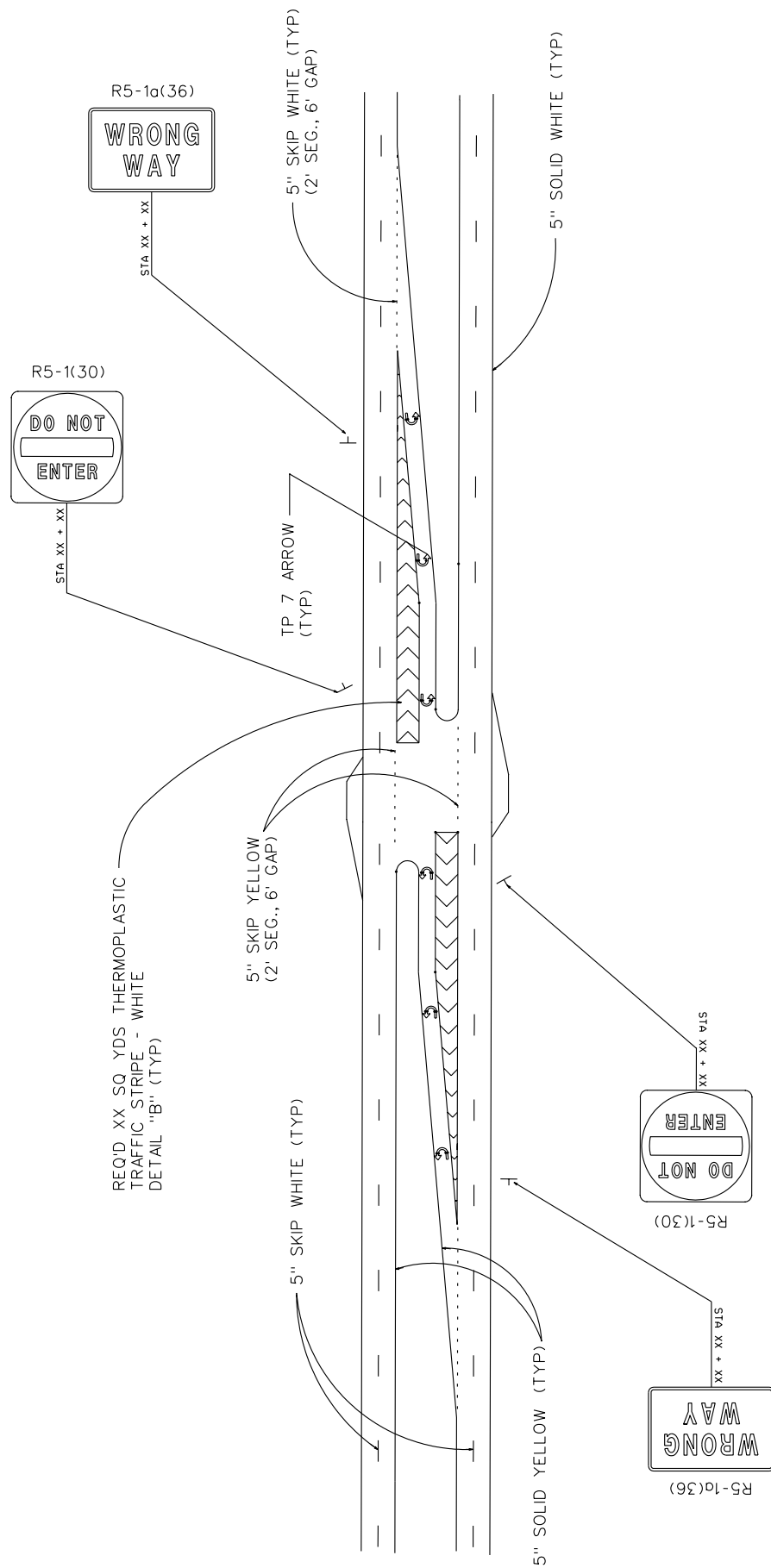
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT TURN LANES.
2. STOP BARS SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1 (STOP) SIGNS).
3. R6-3 (DIVIDED HIGHWAY CROSSING) SIGNS SHALL NOT BE USED IN URBAN AREAS.
4. W3-1a (STOP AHEAD) SIGNS (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGNS SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
6. R6-1R, R6-1L (ONE WAY) SIGN SHALL BE USED ONLY IF MEDIAN WIDTH IS GREATER THAN 30'



SIGNING/MARKING AT TYPE A MEDIAN CROSS ROAD INTERSECTION

FIGURE A-5

NO SCALE



- NOTES:
1. R5-1(DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE OPPOSING U-TURN LANES.
 2. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.



SIGNING/MARKING AT TYPE B MEDIAN OPENING

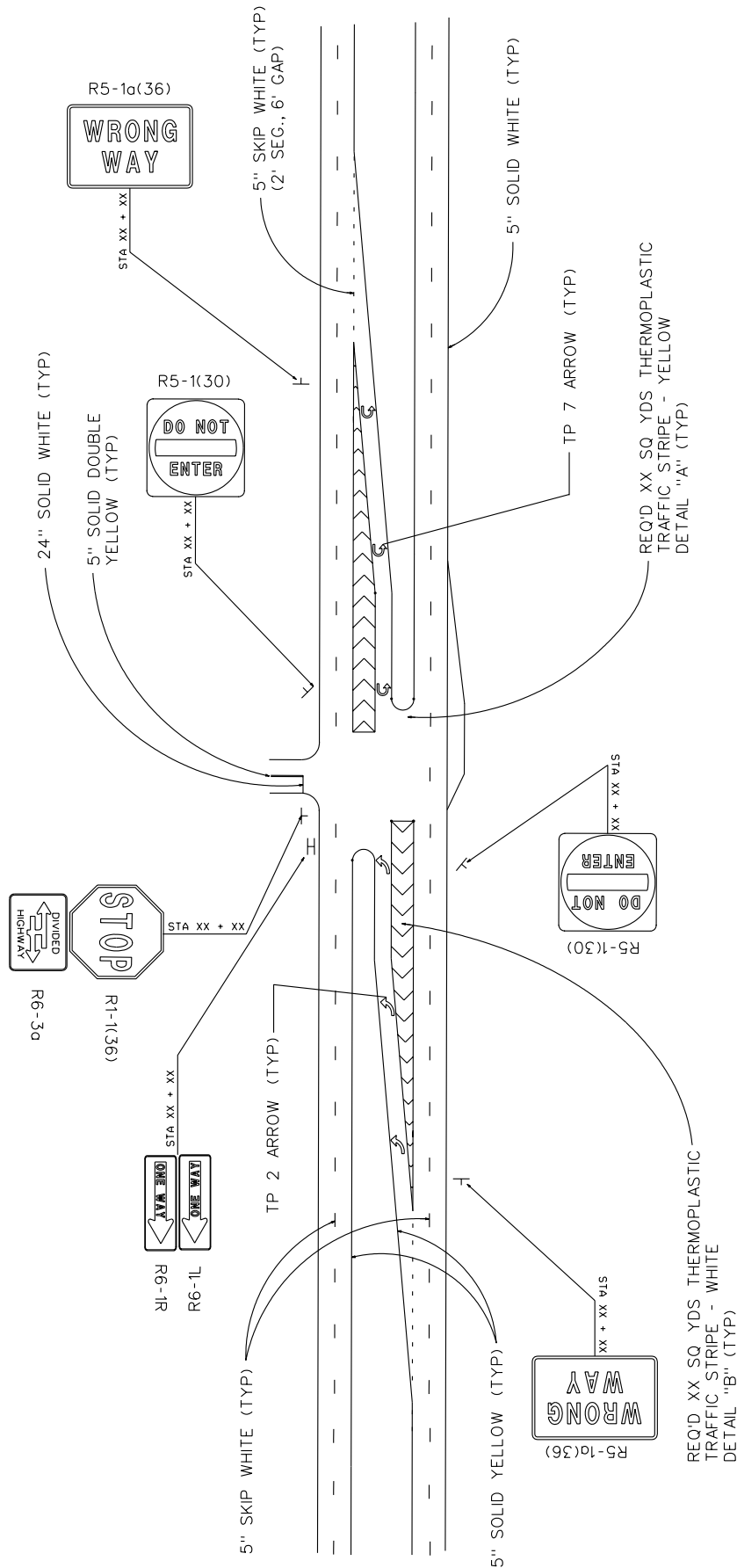
FIGURE A-6



SIGNING/MARKING AT TYPE B MEDIAN "T" INTERSECTION

FIGURE A-7

NO SCALE



NOTES:

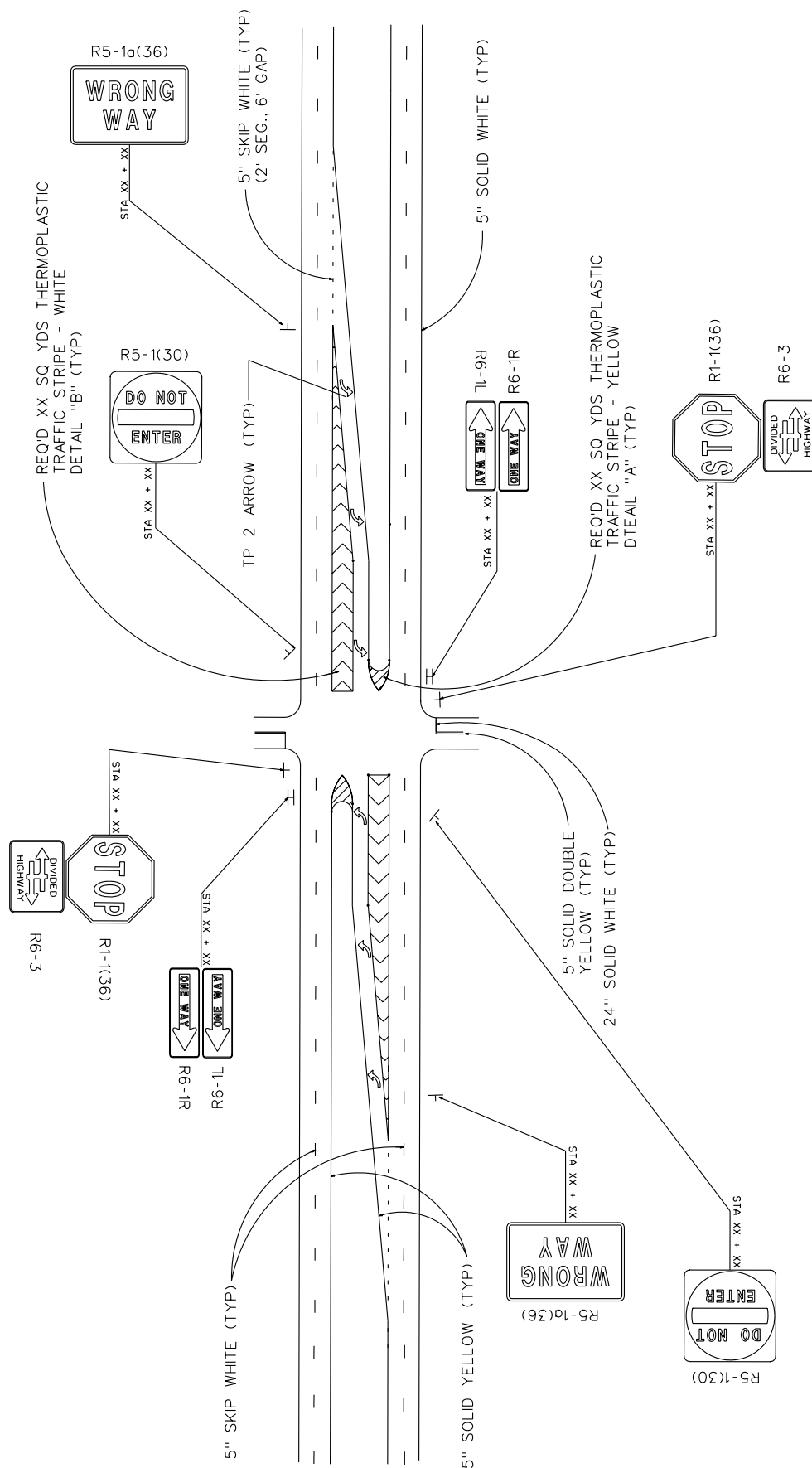
1. R5-1(DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT/U-TURN LANES.
2. STOP BAR SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1(STOP) SIGN).
3. R6-3a (DIVIDED HIGHWAY CROSSING) SIGN SHALL NOT BE USED IN URBAN AREAS.
4. W3-1g (STOP AHEAD) SIGN (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGN SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
6. R6-1R, R6-1L (ONE WAY) SIGN SHALL BE USED ONLY IF MEDIAN WIDTH IS GREATER THAN 30'.



SIGNS/MARKINGS AT TYPE B MEDIAN CROSS ROAD INTERSECTION

FIGURE A-8

NO SCALE



NOTES:

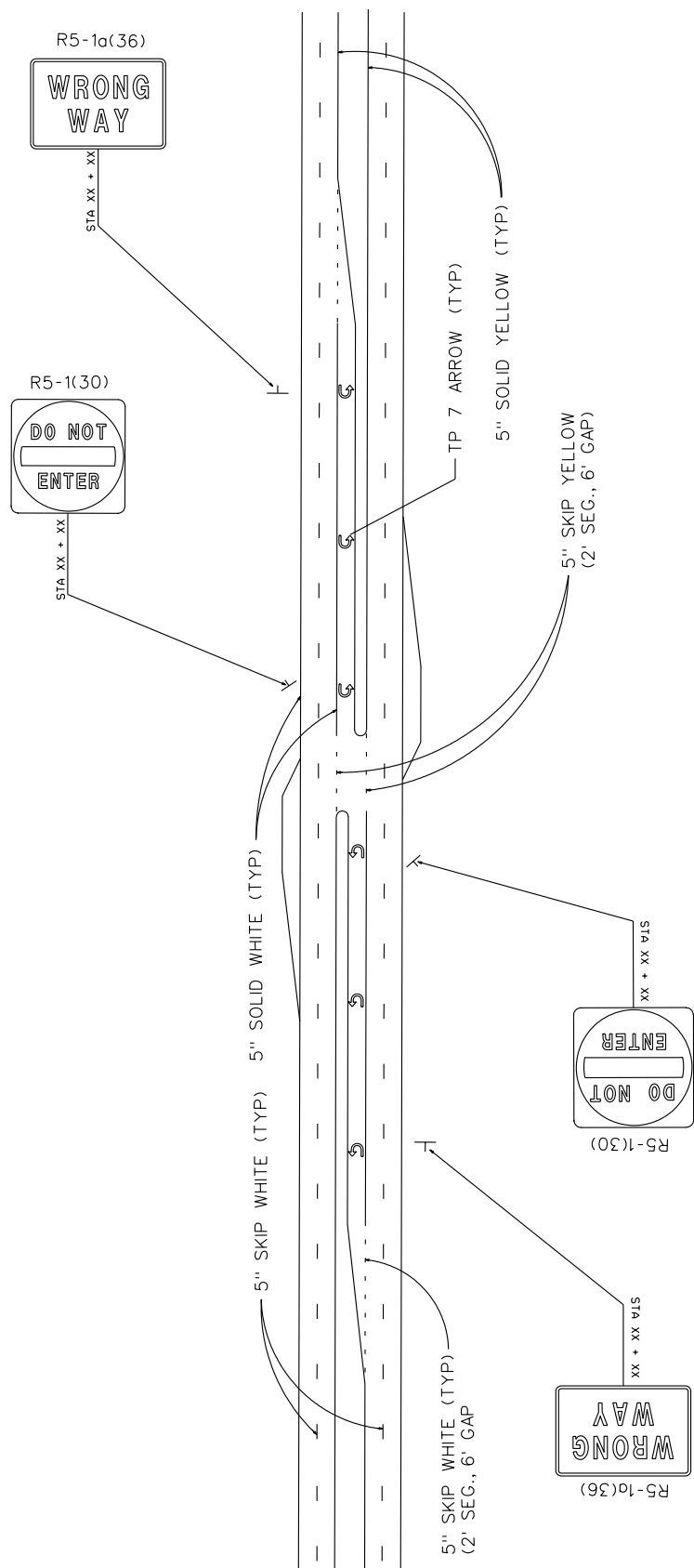
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT TURN LANES.
2. STOP BARS SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1 (STOP) SIGNS).
3. R6-3 (DIVIDED HIGHWAY CROSSING) SIGNS SHALL NOT BE USED IN URBAN AREAS.
4. W3-1a (STOP AHEAD) SIGNS (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGNS SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
6. R6-1R, R6-1L (ONE WAY) SIGN SHALL BE USED ONLY IF MEDIAN WIDTH IS GREATER THAN 30'.



SIGNING/MARKING AT TYPE C MEDIAN OPENING

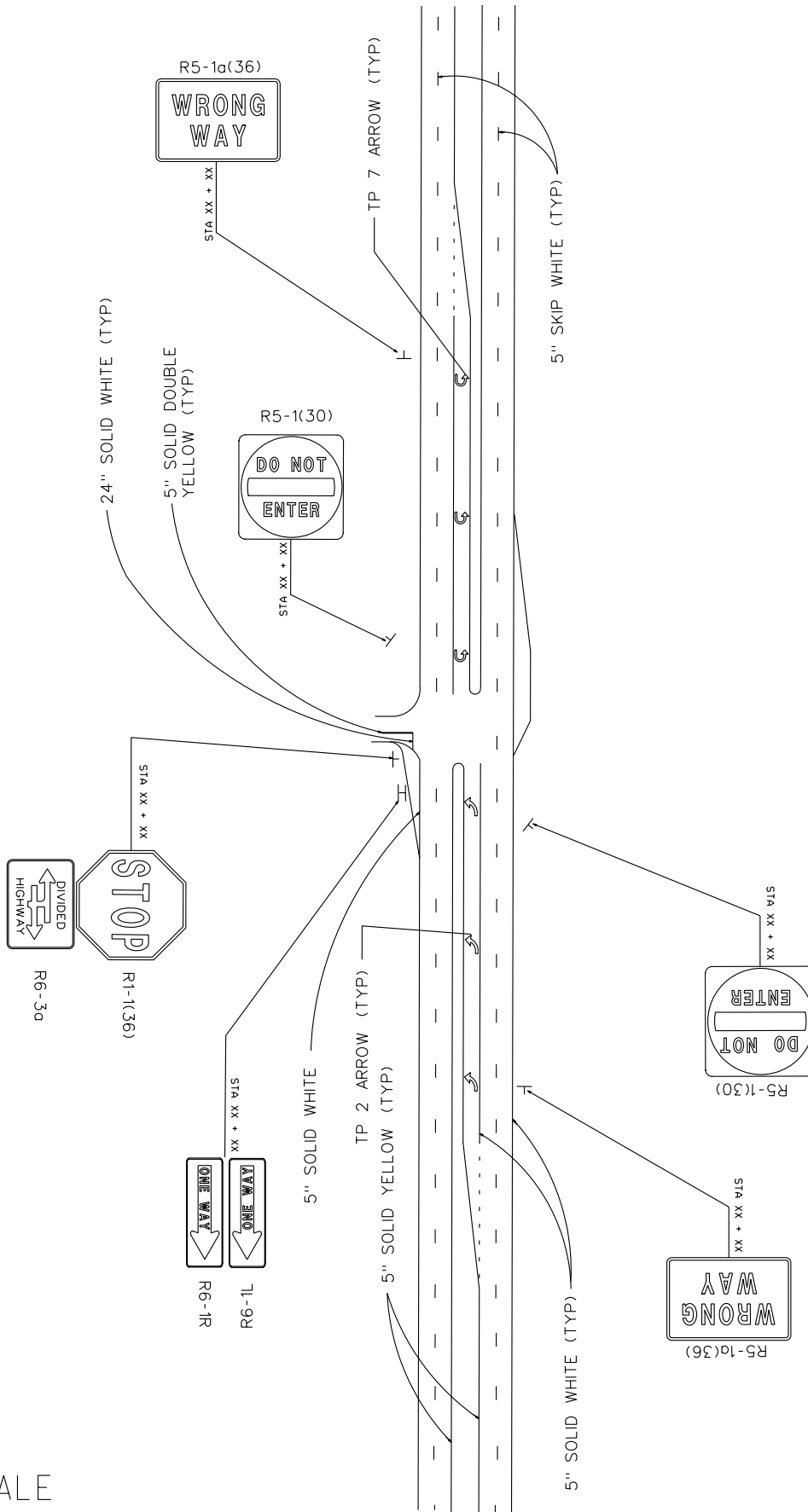
FIGURE A-9

NO SCALE



- NOTES:
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE OPPOSING U-TURN LANES.
 2. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.

NO SCALE



- NOTES:
1. R5-1(DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT/U-TURN LANES.
 2. STOP BAR SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1(STOP) SIGN).
 3. R6-3a (DIVIDED HIGHWAY CROSSING) SIGN SHALL NOT BE USED IN URBAN AREAS.
 4. W3-1a (STOP AHEAD) SIGN (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGN SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
 5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
 6. R6-1R, R6-1L (ONE WAY) SIGNS SHALL BE USED ONLY IF MEDIAN WIDTH IS GREATER THAN 30'.



SIGNING/MARKING AT TYPE C MEDIAN "T" INTERSECTION

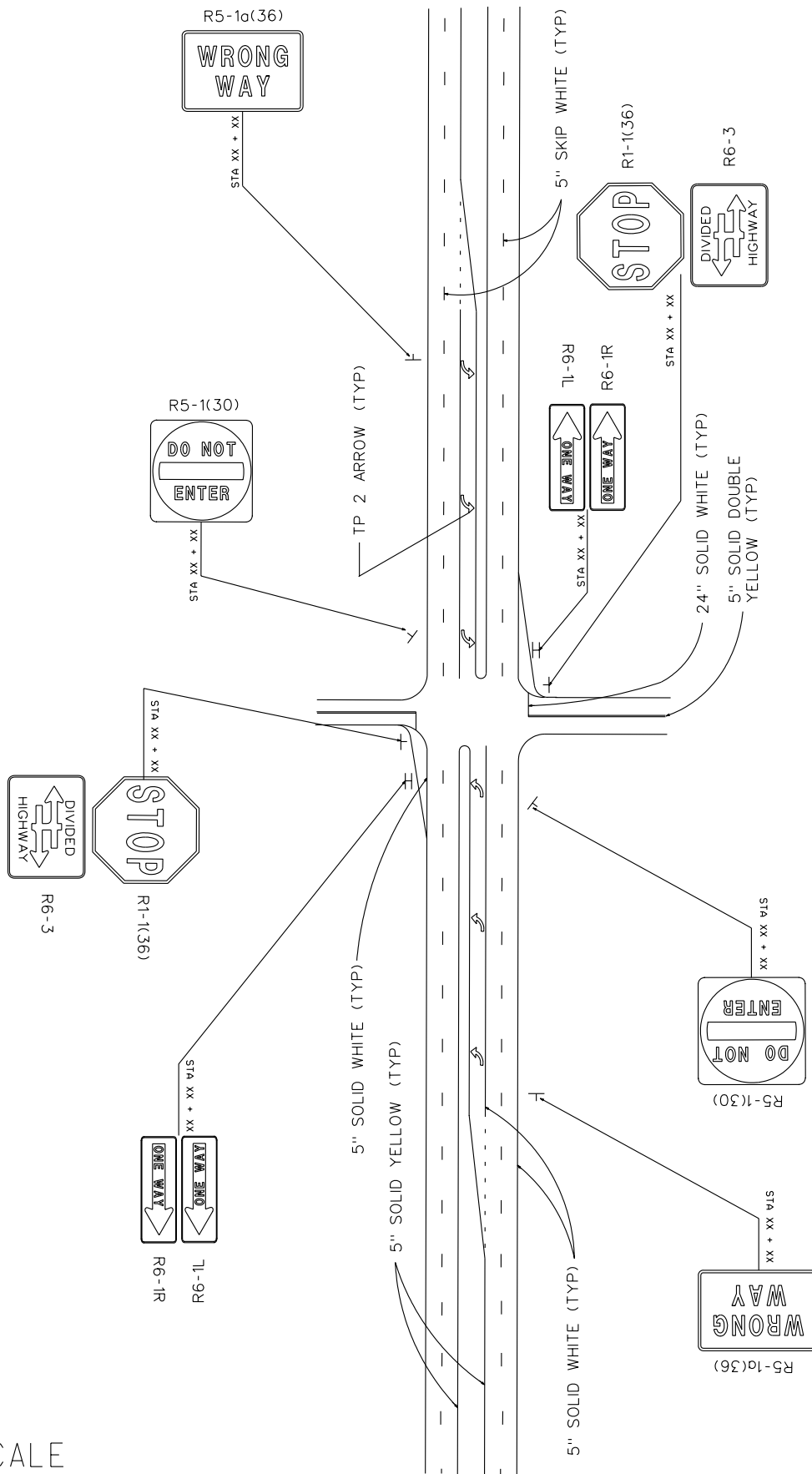
FIGURE A-10



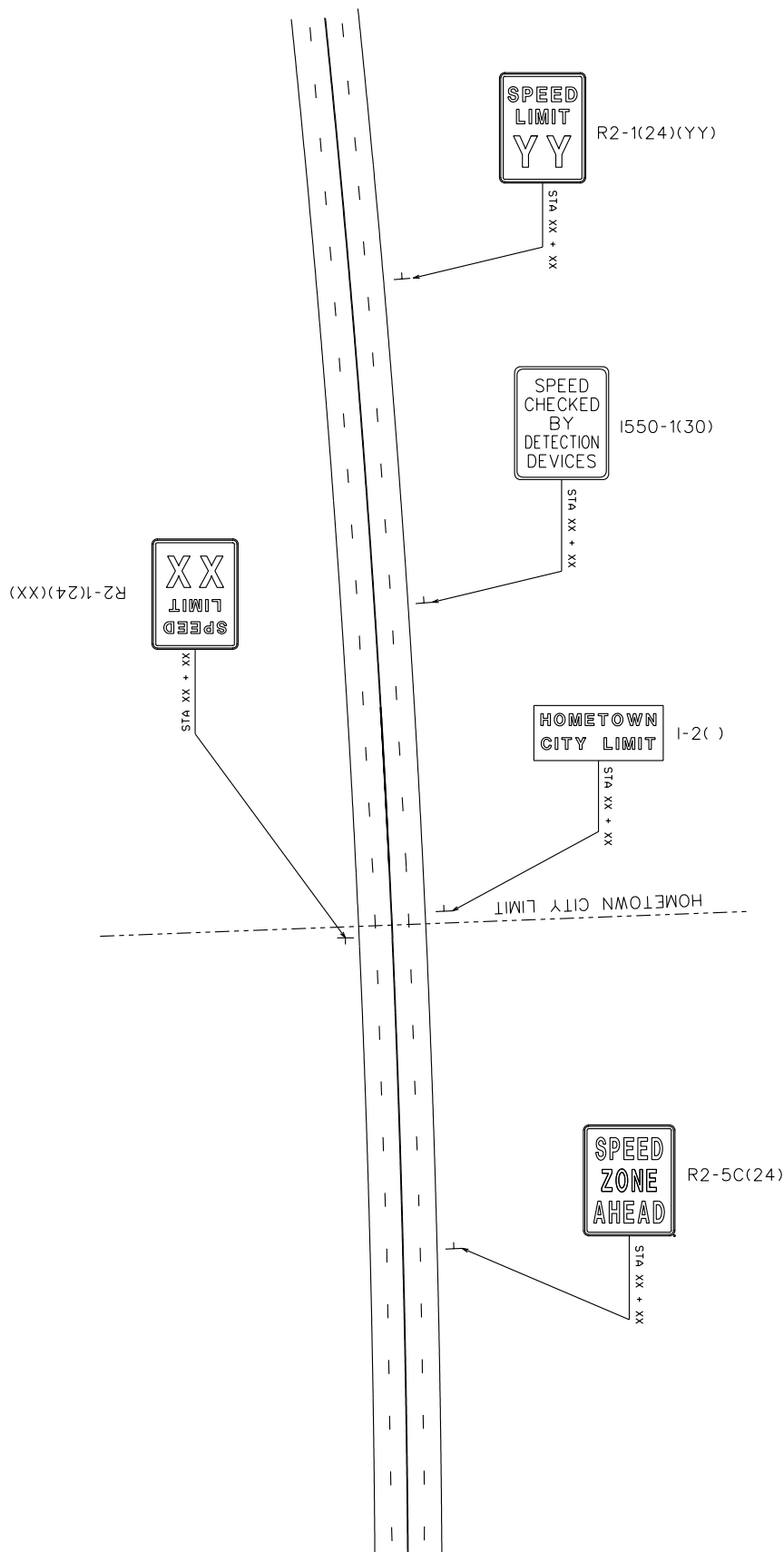
SIGNING/MARKING AT TYPE C MEDIAN CROSS ROAD INTERSECTION

FIGURE A-11

NO SCALE



- NOTES:
1. R5-1 (DO NOT ENTER) SIGNS SHALL BE ORIENTED TOWARD THE MAINLINE LEFT TURN LANES.
 2. STOP BARS SHALL BE 24 INCHES IN WIDTH AND PLACED FOR MAXIMUM SIGHT DISTANCE (NOT NECESSARILY ADJACENT TO R1-1 (STOP) SIGNS)
 3. R6-3 (DIVIDED HIGHWAY CROSSING) SIGNS SHALL NOT BE USED IN URBAN AREAS.
 4. W3-1a (STOP AHEAD) SIGNS (NOT SHOWN) SHALL BE PLACED ON ALL CROSS ROADS IN RURAL AREAS. THE DISTANCE FROM THE R1-1 SIGNS SHALL BE BASED UPON FIELD CONDITIONS, BUT IN NO CASE LESS THAN THE DISTANCE AS DEFINED IN THE M.U.T.C.D.
 5. ADDITIONAL SIGNING MAY BE REQUIRED AS DETERMINED BY A SOUND TRAFFIC ENGINEERING STUDY BASED UPON CONDITIONS AT EACH LOCATION.
 6. R6-1R, R6-1L (ONE WAY) SIGNS SHALL BE USED ONLY IF MEDIAN IS GREATER THAN 30'.



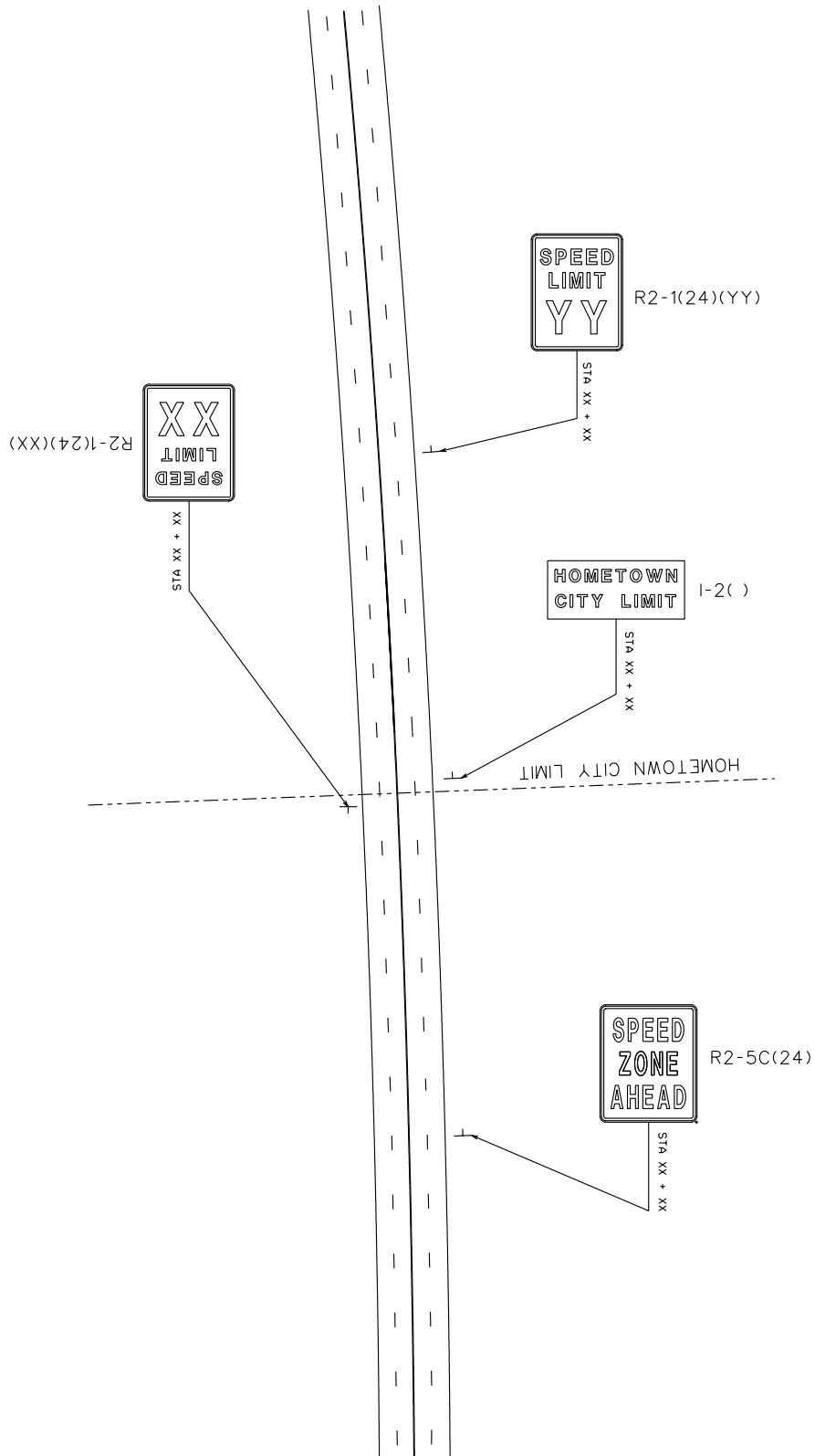
- NOTES:
1. SPACING BETWEEN SIGNS IS 500 FEET.
 2. SEE DETAILS OF POLITICAL BOUNDARY SIGNS FOR DESIGN OF THE I-2 SIGN.
 3. SPEED ZONE AHEAD (R2-5C) SIGN IS NOT REQUIRED WHEN THE SPEED LIMIT DOES NOT CHANGE AT THE CITY LIMIT.

NO SCALE



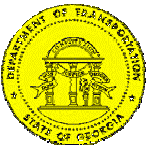
CITY LIMIT SIGNING W/PERMIT FOR DETECTION DEVICE

FIGURE A-12



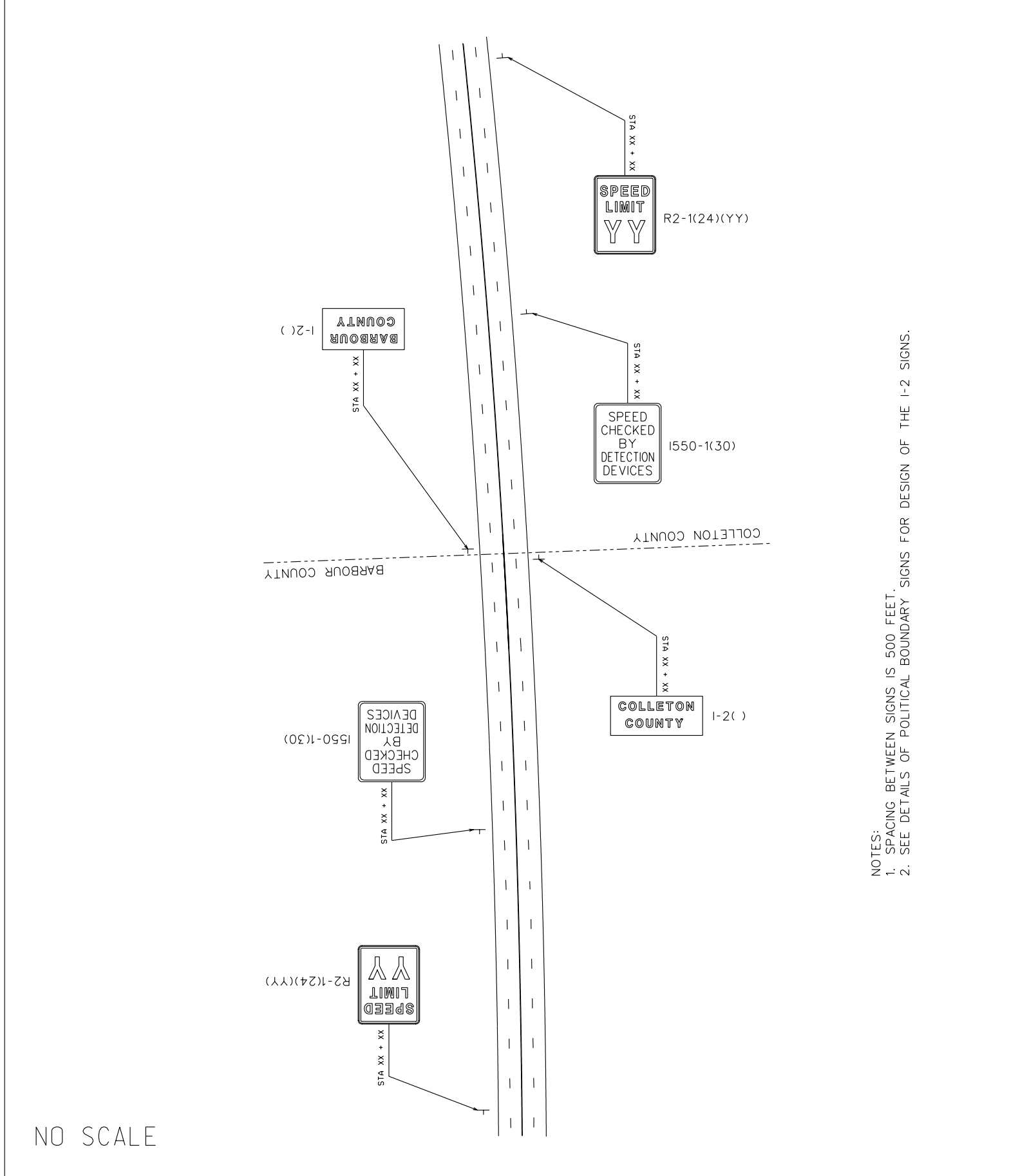
- NOTES:
1. SPACING BETWEEN SIGNS IS 500 FEET.
 2. SEE DETAILS OF POLITICAL BOUNDARY SIGNS FOR DESIGN OF THE I-2 SIGN.
 3. SPEED ZONE AHEAD (R2-5C) SIGN IS NOT REQUIRED WHEN THE SPEED LIMIT DOES NOT CHANGE AT THE CITY LIMIT.

NO SCALE

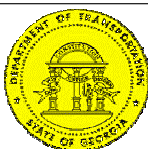


CITY LIMIT SIGNING W/O PERMIT FOR DETECTION DEVICE

FIGURE A-13

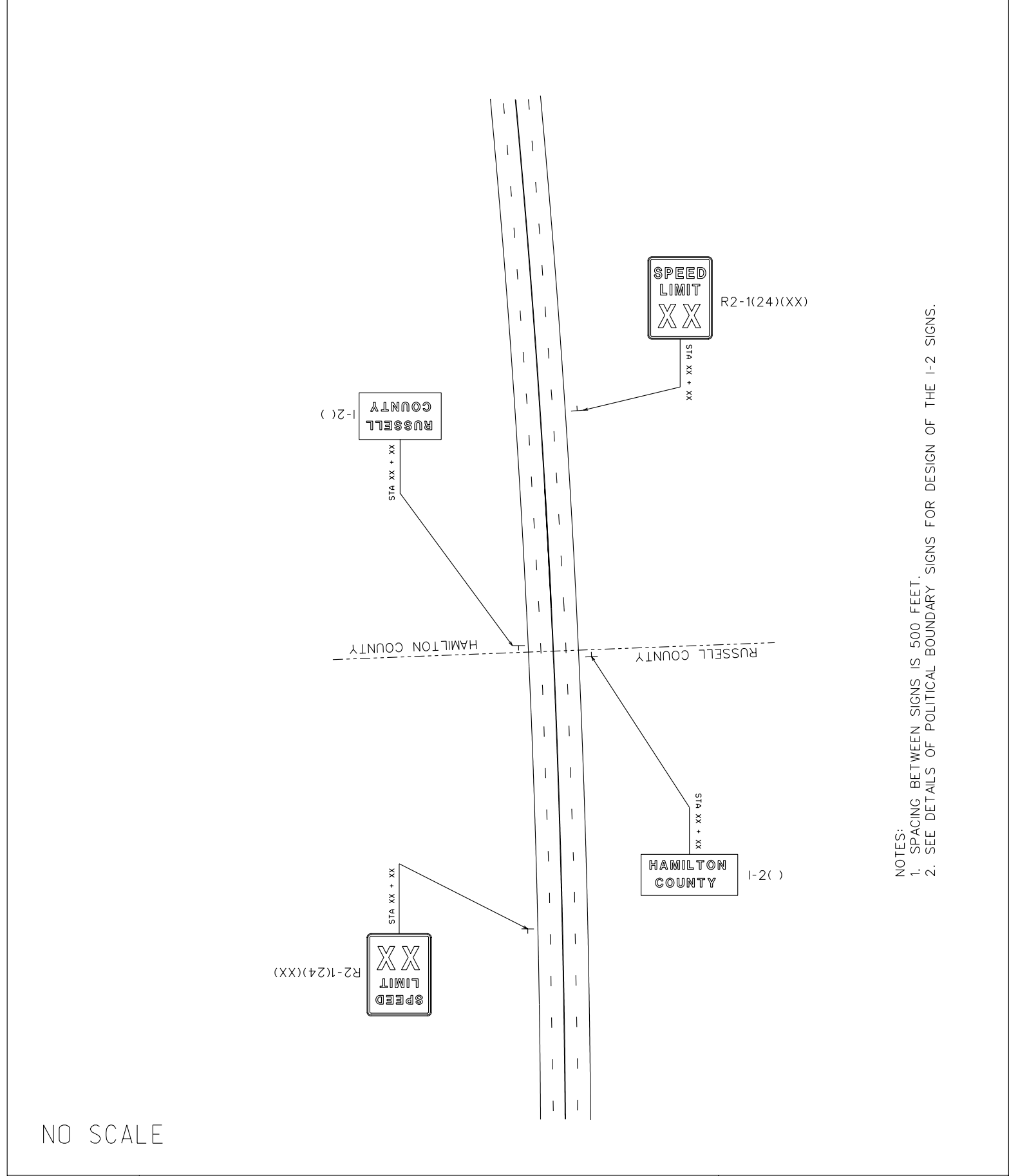


NOTES:
 1. SPACING BETWEEN SIGNS IS 500 FEET.
 2. SEE DETAILS OF POLITICAL BOUNDARY SIGNS FOR DESIGN OF THE I-2 SIGNS.



COUNTY LINE SIGNING W/PERMIT FOR DETECTION DEVICE

FIGURE A-14

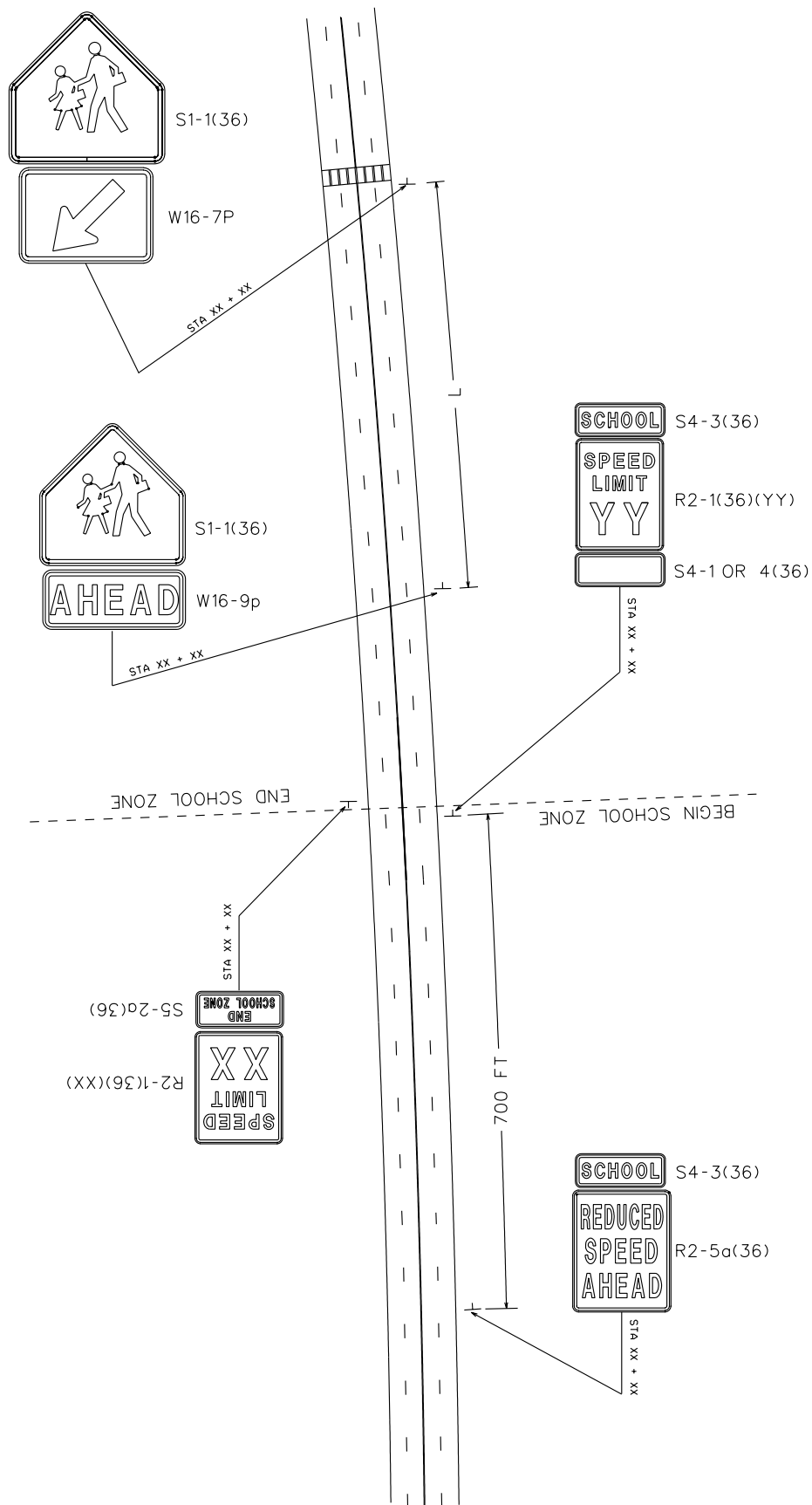


NOTES:
 1. SPACING BETWEEN SIGNS IS 500 FEET.
 2. SEE DETAILS OF POLITICAL BOUNDARY SIGNS FOR DESIGN OF THE I-2 SIGNS.



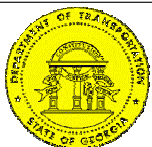
COUNTY LINE SIGNING W/O PERMIT FOR DETECTION DEVICE

FIGURE A-15



- NOTES:
1. DISTANCE (L) BETWEEN S1-1/W16-9P AND S1-1/W16-7P SIGNS SHALL BE AS DEFINED IN THE MUTCD.
 2. THE S5-1 SIGN SHALL BE USED AT THE BEGINNING OF THE SCHOOL ZONE WHEN FLASHING LIGHTS ARE INSTALLED.
 3. SIGNING SHOWN AT ONE END, ONLY, OF THE SCHOOL ZONE.

NO SCALE



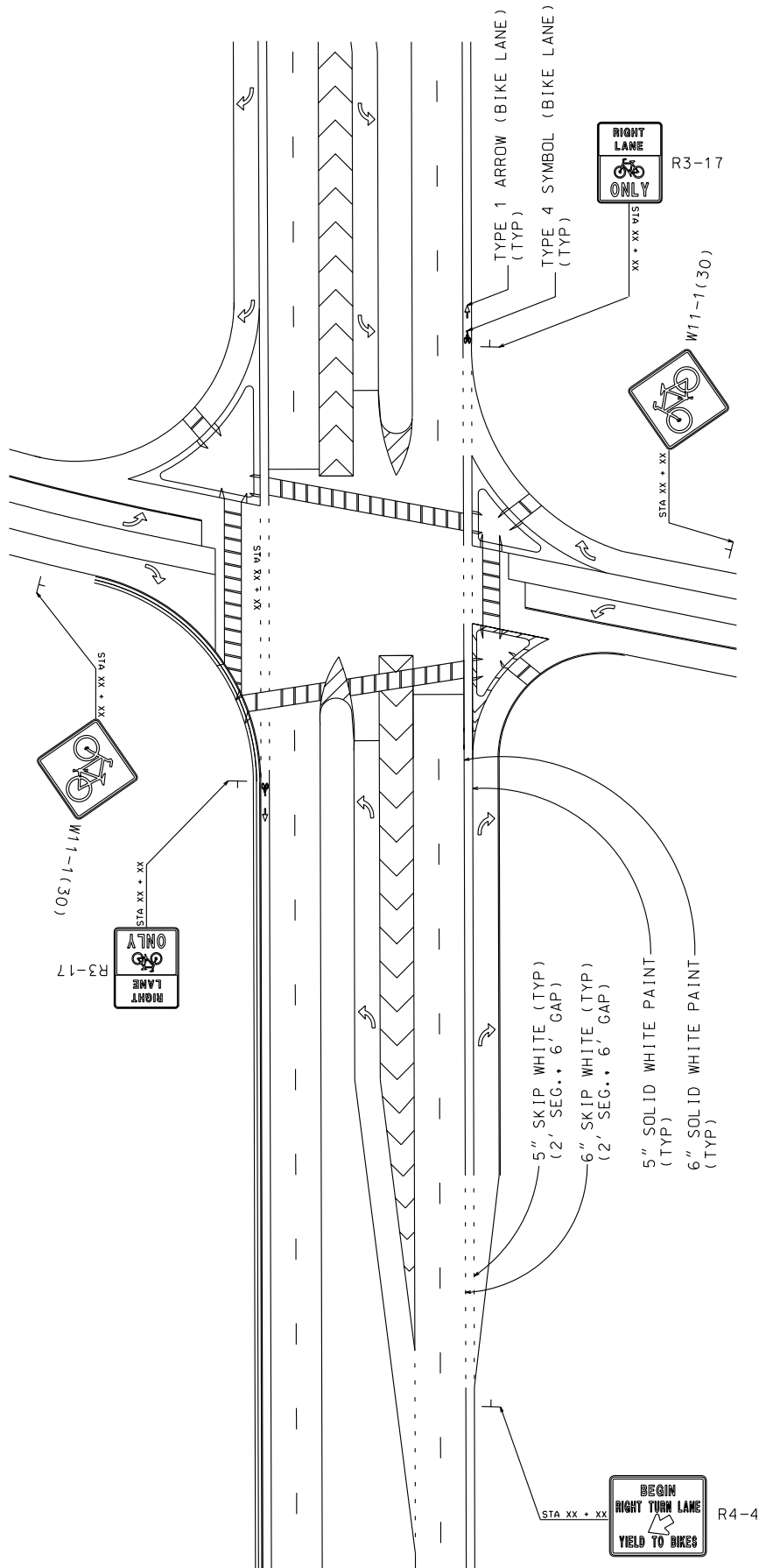
SCHOOL ZONE SIGNING

FIGURE A-16

Appendix B

Bicycle Signing and Marking

NO SCALE



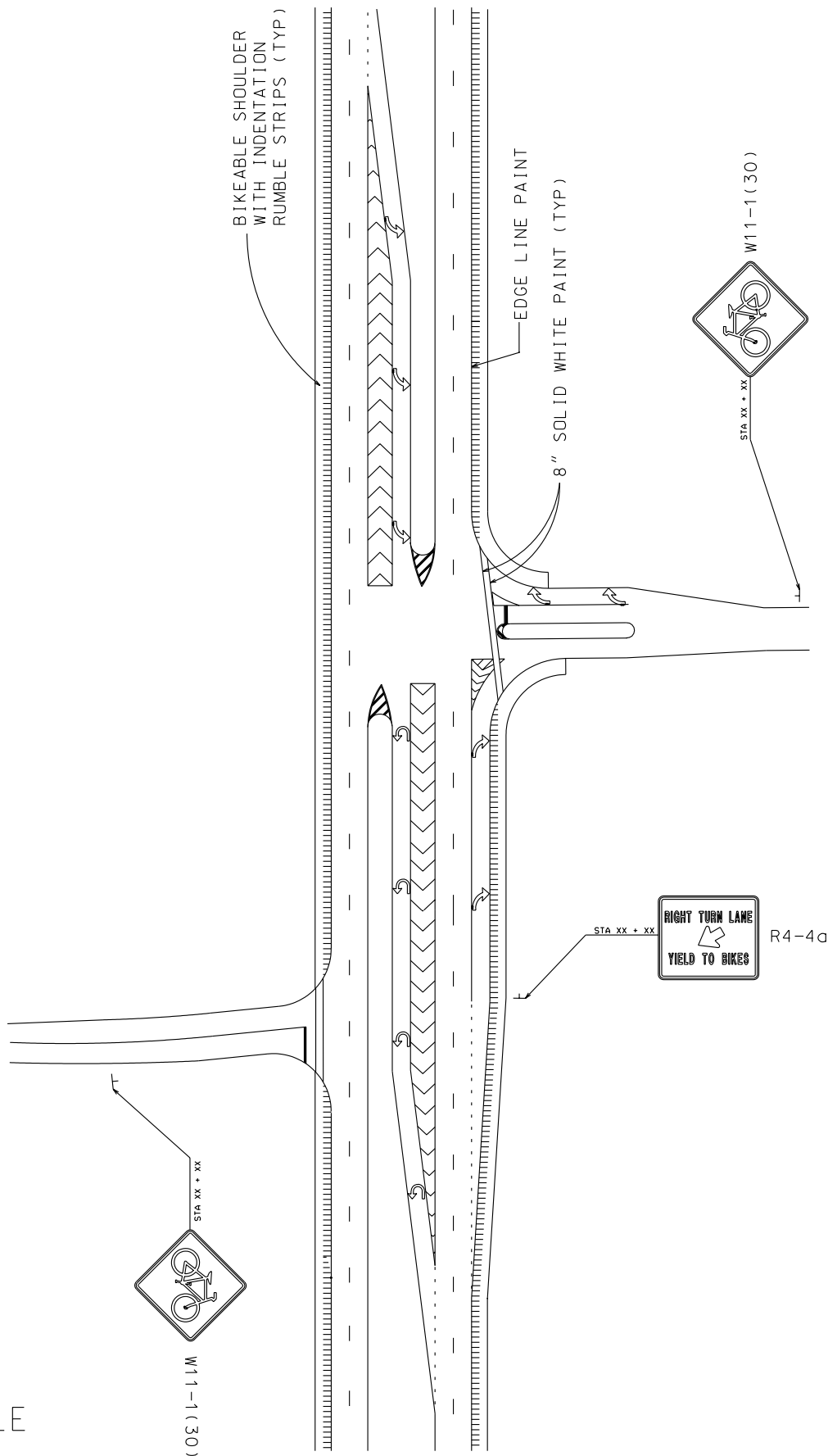
- NOTES:
1. ALL BICYCLE LANE PAVEMENT MARKINGS SHALL BE PAINT.
 2. ONLY BICYCLE LANE SIGNING SHOWN. PLACE OTHER SIGNS AS REQUIRED.
 3. FOR DESIGN AND PLACEMENT OF BICYCLE LANE PAVEMENT SYMBOLS, SEE BICYCLE LANE PAVEMENT MARKING DETAILS.
 4. R3-17 SIGNS SHALL BE PLACED ADJACENT TO BICYCLE LANE PAVEMENT SYMBOLS.
 5. LOCATION OF W11-1 SIGNS SHALL BE BASED UPON SPEED LIMIT AS DEFINED IN THE M.U.T.C.D.
 6. BICYCLE LANE PAVEMENT SYMBOLS AND R3-17 SIGNS SHALL BE PLACED ON THE FAR SIDE EVERY MAJOR INTERSECTION. ON LONG UNINTERRUPTED STRETCHES, R3-17 SIGNS AND BICYCLE LANE PAVEMENT SYMBOLS SHALL BE PLACED NO MORE THAN 5 MILES APART.



BICYCLE LANE SIGNING AND MARKING

FIGURE B-1

NO SCALE



- NOTES:
1. ALL BICYCLE LANE PAVEMENT MARKINGS SHALL BE PAINT.
 2. ONLY BICYCLE LANE SIGNING SHOWN. PLACE OTHER SIGNS AS REQUIRED.
 3. LOCATE THE W11-1 SIGN BETWEEN THE STOP SIGN AND STOP AHEAD SIGN.



BICYCLE SHOULDER SIGNING AND MARKING

FIGURE B-2